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The Foundation places itself at the service of international co-operation in the academic and scientific field by:

promoting higher education and scientific research in the Netherlands of a nature capable of meeting needs felt beyond the country's own frontiers;

making known abroad what the Netherlands can contribute to international co-operation in the field of higher education and scientific research;

lending its collaboration in other ways to further international scientific exchange in the widest sense of the term.

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FOREWORD

Two of the three dates you will find on the cover of this issue refer to the bulletin itself, while all three relate to the history of our Foundation.

In January 1962 the Netherlands Universities Foundation for International Co-operation will have existed for ten years. It was on January 11, 1952 that representatives of the Netherlands universities signed the deed of foundation, stating that they "desired to support the Government's wish that higher education in the Netherlands should serve the purpose of international co-operation".

The present issue of higher education and research in the Netherlands completes the fifth annual volume. It is with some measure of surprise that we realize that five years have passed since the magazine was launched . . . by way of experiment. This double jubilee – the tenth anniversary of NUFFIC *itself and the fifth anniversary of our bulletin – explains the present number's party jacket and special contents.*

The first ten years of the Foundation's existence have not been easy years, though they have been valuable and fruitful years, thanks to the success of a number of activities. Our former chairman, Professor A. L. de Block, has taken a look back over this ten year period in his commemorative article.

The founding and development of the Institute of Social Studies, an institution of international academic education entirely new to the Netherlands, have been crowned with succes, as became apparent as early as the year 1956, when the Institute entered upon a new phase in its history, as a separate foundation with an independent existence, and as has since been confirmed by its further expansion and by the growing international reputation it enjoys.

We are deeply indebted to Professor de Block for his review of the Foundation's history, but also for the skilful way in which he guided it through many rocky channels for more than nine years.

In the years following on its foundation, NUFFIC *has succeeded in widening its activities. International co-operation was a terrain in which it had to feel its way. We have gained the impression that in several respects the Foundation has succeeded in finding a useful answer to international problems and international needs.*

We think of the expanding collection of documentary records which enables NUFFIC *to provide reliable and practical information on problems of higher education and research both about the Netherlands to people in the world outside and, in the reverse direction, about the world outside to people in the Netherlands.*

We think particularly of the international courses: the International Course in Hydraulic Engineering, which has just launched upon its fifth year and which already enjoys an international reputation; of the European Course in Sanitary Engineering, *now in its second year, which has been organized in co-operation with the assistance of the O.E.E.C. and the European section of the World Health Organization; and of the highly succesful summer courses in the natural sciences, so far organized for two years running with assistance from the North Atlantic Treaty Organization. We think, too, of the new enterprises which our chairman, Professor J. Th. Thijsse, has referred to in his contribution to this issue of the bulletin : enterprises concerned with studying the assistance higher education in the Netherlands can lend to development countries.*

We are grateful to His Excellency the Minister of Education, Arts and Sciences, for honouring our jubilee issue with an article and would like to express our special thanks for this sign of his appreciation of the activities our Foundation is developing in fields over which his Ministry spreads its wings.

We are no less grateful for the contribution from Professor C. H. MacGillavry and Professor B. A. van Groningen on the Royal Netherlands Academy of Sciences and Letters. The supreme academic authority in the Netherlands, the Academy, naturally had to have a place in the jubilee issue of a magazine which endeavours to give a picture of academic life in the Netherlands, and not merely a place, but a leading one. Could we have found better authors to give us an account of scientific research in the Netherlands than the chairmen of the Netherlands Organization for the Advancement of Pure Research (the Z.W.O.) and of the Organization for Applied Scientific Research in the Netherlands (the T.N.O.) – respectively Professor J. N. Bakhuizen van den Brink and Professor H. W. Julius ?

Professor C. A. van Peursen, loyal member of NUFFIC's *working group which concerns itself with the study of international cultural relations, was kind enough to write a survey of that subject for us. Professor W. Schermerhorn, himself the director of an important institute of international education – the International Training Centre for Aerial Survey – and also chairman of the committee set up by* NUFFIC *to investigate the ways in which international institutes and courses in the Netherlands can make a contribution towards meeting the educational needs of development countries, has supplied an article in which he discusses the work and the future prospects of these courses. Finally, an article on higher education in the Netherlands generally has been contributed by Dr. H. J. Woltjer, a name with which regular readers of our bulletin will already be very familiar.*

This is the place to mention others too, those without whose work the publication of our bulletin in four foreign languages would be impossible – our loyal body of translators. Without wishing to do injustice to the others, we would like to mention *the name of Mr. James Brockway in particular, our "Editor for English", the benefit of whose excellent service we have enjoyed from the very first issue.*

With this number, then, the bulletin's fifth volume is complete. In the Spring of 1962 the first issue of Volume Six will appear in the normal format. We have insufficient space at our disposal to review the results achieved, even if the necessary data were available. For five years the editors have supplied factual information about scholarships, international courses, congresses, dissertations, libraries, museums, university events and research projects.

Although not every number has been able to boast so impressive a body of contributors as this jubilee issue, a number of leading authors have nevertheless made it possible for us to draw attention to special branches of knowledge. We do not know whether what we have published has always hit the mark, but the numerous signs of appreciation and agreement which we have regularly received from our readers encourage us to proceed further along our chosen path.

To us the bulletin has signified a great deal. It has woven a network of contacts with persons and institutions throughout the world. Such contacts have been an enrichment to us and have lightened our task. In the past five years the bulletin has evolved into one of the most practical instruments of international co-operation our Foundation possesses. Perhaps we may add – in all modesty – which our country possesses.

THE EDITORS

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INTERNATIONAL CO-OPERATION IN HIGHER EDUCATION

The function of the Universities and the Government

The above description of the subject – or rather, of the subjects – on which the Directors of the Netherlands Universities Foundation for International Co-operation have asked me to write an article for this jubilee issue of HIGHER EDUCATION AND RESEARCH IN THE NETHERLANDS will no doubt have raised just as many questions in the reader's mind as it has in mine.

One of these questions might be whether in a period when international scientific and academic contacts are flourishing as never before, there is any further need to pay special attention to the function the universities and the Government have to perform in this field. At least, that is, assuming it is the intention – and I may not attribute any other consideration to the directors of the NUFFIC – that I should choose words designed to stimulate interest in international co-operation in the academic field.

The activity which has developed in this field, especially since the war, has in fact already assumed such proportions that it even seems wiser once in a way to take a look at the reverse side of the medal. To point, for example, as I did in 1960, in the explanatory memorandum on the Ministry of Education's estimates for 1961, to the danger there is of prominent scientists having too little time left for strictly scientific work, if too great a demand is made on them to place their services at the disposal of national and international organizations and committees.

In this special jubilee issue, however, it would be out of place to elaborate on reflections such as these. And so I will take as my departure point the consideration I mentioned in the same memorandum, to wit, that it is a gratifying sign that among many inside and outside the universities there should be a growing understanding of the new position science and academic teaching have come to occupy in a rapidly changing world. It is also a source of great satisfaction – as I then said – that Netherlands professors and other men of learning should often be playing a greater role in the international field than might be expected, considering our relatively small population.

All the same, it is as well to remember that international co-operation in higher education and research, though indeed a phenomenon typical of our own day and age as far as its present scope and organization are concerned, is not so in its essence. The universal character of scientific work has never been disputed, at least not by the majority of scientists, even though the "world" has gradually expanded to comprise more and more countries. There have, it is true, been periods in the course of history when international contacts have been obstructed and even ruled out altogether, but they were usually reasons of a political nature which led to these restrictions, and did so very much against the will of men of science themselves.

Although the universal character of the practice of science and of the communication of scientific knowledge is as old as knowledge itself, the motives and methods which determine them have changed to such a degree that this alone was sufficient instigation for me to respond to the request to write this piece. Even though, at first glance, it seemed like being asked to repeat the obvious.

Let me say a few words about this change in motives and methods. In times past, the practice of science and the communication of its findings were – far more than they now are – matters which concerned a few persons only or, where academic work was concerned, the university community only. Generally speaking, the aim of international co-operation in the field of higher education and research was in those days clear and simple. It was to enlarge the knowledge of those engaged in science and academic life and in search of the absolute truth regarding faith, life and the world about them. Sometimes the ecclesiastical – and later the temporal – authorities lent this work their material aid yet refrained from direct intervention in university affairs, as long as the authority of church and government was not affected.

How different a picture is presented today by the complex of scientific, political, military, economic and social factors which now have so great an influence on the scope and organization of international co-operation in the academic field and on academic and scientific exchange, i.e. the interchange of knowledge and information through personal contacts and the written word.

Today, too, there are undoubtedly – and fortunately – still countless men of learning scattered all over the world who seek contacts with their colleagues or temporary co-operation in some team or other, by means of private contacts, in order to arrive at an exchange of ideas and thus to enrich their knowledge and experience on both sides. Yet, if today we seek a formula to express the aims and purposes of international co-operation in so many words, it is not sufficient merely to mention the ideal of raising the scientific level attained by a single prominent man of learning or by a limited group of students. Nowadays it is necessary to mention the requisite bundling together of men and means and a division of labour arrived at by mutual consultation as the reasons for seeking that co-operation, which has come to play so great a role in the natural sciences particularly, as endeavours to penetrate the mysteries of the microcosmos and the macrocosmos call for wider thought and costlier equipment.

In this context I consider of no less significance the practical application of the findings of research to raise the standard of welfare, spiritual and material, all over the world. Here lies a task for others besides the physicists and technologists. The social sciences can perform an important part here, especially where aid to countries and regions now witnessing a process of accelerated change is involved. It is of the highest importance that this process should take place in such a way and at such a pace that the problems that inevitably arise with the transition to other ways and a new rhythm of life should be kept to the smallest possible proportions. The board and directors of the International Institute of Social Studies, first offspring of co-operation among the Netherlands universities, united in the NUFFIC, fully understood the important task that was waiting to be done in this field and performed it in excellent fashion. I am gratified to think that most likely there will also be important work for the Institute to do in bringing about international co-operation in this branch of science.

I should be wanting if I were to omit to say that the need to strengthen the military and economic potential of the political blocs into which the world is divided has come to be perhaps the most powerful motive behind the stimulation and organization of international co-operation in the world of science. Although I am persuaded of the inevitability of this trend, I can nevertheless understand those who regret that such factors have come into play in this field, even if only because, in this world of fiercely opposed interests, they sometimes hamper world co-operation in science and because they can lead to the fostering of scientific activities on an international basis which would not enjoy the same priority, were they to be considered from a purely academic viewpoint.

As against this, however, there is the encouraging thought that the development of

State University at Leyden (founded in 1575) – The University building

(By courtesy of the Department of Press and Information of the University)

State University at Groningen (founded in 1614) – The University building

(Copyright: Mrs C. Swaak-van Barneveld; photograph taken for the booklet "Stad Groningen", published by P. Noordhoff, Groningen)

international co-operation and of a multiplicity of international contacts among a widening circle of scientists can make a significant contribution to bridging differences, even though these contacts are not consciously sought for the purpose of promoting world peace.

Coming now to the question as to what the specific task of the Netherlands universities is in the field of international co-operation in higher education and research, I believe that it is the right and privilege of these bodies to determine the nature and scope of this task themselves and to allot it its proper place in the complexity of duties they have to perform, either by free choice or in accordance with the provisions of the Higher Education Act. The Netherlands Universities Foundation for International Co-operation exists to help the universities to give substance to this right and to support them in the work which results. It seems very important to me too that the universities should endeavour – as they are doing – to work together as far as they can to foster the development of activity in the international field. And the obvious executive body for this purpose is, of course, NUFFIC.

Thus, while fully recognizing the right – and the duty – of the Netherlands universities to decide for themselves what their precise task should be here, I should like to make a few remarks on the subject, since I have been requested to, though these remarks will not be exhaustive.

To begin with then, may I point to the important task the universities have to fulfil inside and outside the Netherlands, acting individually but also, where necessary, in unison, as the guardians of essential spiritual values. H. M. the Queen, in the Speech from the Throne, delivered on September 19 last, has already stressed that it is precisely these values which give a deeper significance to life and justify the efforts our country and the entire free world are now obliged to make. It is clear that an international concentration of potential can have the greatest effect in this field too.

Then I would like to mention the scientific study of development problems in the socio-economic and socio-psychological fields and the field of law, both in countries where development has been retarded and in the highly-developed countries. For years the Netherlands have occupied a prominent position in Asiatic studies. It seems desirable and possible that the Netherlands universities should continue in the future, too, to help lay the foundations of learning which are essential, if we are to achieve mutual understanding and international co-operation in every field covered by science.

Another way in which a country can contribute to scientific co-operation – and one to which the Netherlands are already devoting attention – is to open the universities and science institutes to guest professors, academic assistants and students from other countries. The Netherlands universities have always flung their gates wide open to receive all who wished to come to Holland to enrich their knowledge. Celebrated men of science, too, who for one reason or other wished to leave their own country, have always found a shelter and a place to work in the Netherlands. That the number of foreign students at present working in this country should be rather low compared with the number studying in other countries is not the fault of the Dutch universities and other institutions of higher education. It is largely the inevitable result of the limited knowledge of the Dutch language abroad and of the fact that in various respects the system of academic teaching adopted in our country differs essentially from the system in many English and French speaking areas. Then, too, the great problems with which all Netherlands universities are now wrestling as a result of the rapid increase in the number of students since the end of the second world war and of the sometimes tumultuous advance of research, especially in physics, must also be borne in mind. Nevertheless, I think it highly important that the universities should never cease to remember that there is a job for them to perform in this sphere, too, which cannot be ignored by insisting that "charity begins at home". In considering the best way this task can be performed within the limits of the means available, one would do well, I feel, to pay close attention to what Professor Schermerhorn said on the subject as a member of the Upper House when the Ministry of Education's estimates for 1961 were being debated. I regard it as an act of wise leadership on the part of NUFFIC's Board of Governors that, aware of Professor Schermerhorn's great experience as director of the International Training Centre for Aerial Survey in Delft, they should have asked him to head a committee which will investigate in which specific fields of knowledge, highly developed in the Netherlands, the Netherlands universities world can make its contribution by founding international educational centres. I need not linger long on the wide network of relations which international organizations and individual scientists maintain in the university world. Not because I do not regard this form of co-operation of vital importance, but because the support the universities give to such activities has long been taken for granted.

When speaking about the new tasks the universities may possibly assume, one naturally touches on the Government's own activity to promote international co-operation in the academic field. Scientific research and teaching nowadays occupy so large a place in society that this form of co-operation too, as I have already remarked above, is no longer a matter which concerns, solely or mainly, individual men of learning and students or the universities alone, but one which has taken on obvious political, economic, social and military aspects. Aspects for which the government bears the direct responsibility. In many cases it will be the Government who is the first to be confronted with aspects of international scientific co-operation, since the expense involved far exceeds the funds the universities have at their disposal after meeting their own, domestic needs. It is clear that the Government cannot and may not dissociate itself from direct participation in these activities, or from indirect participation by financing institutions and organizations working in this fields. Nevertheless, I am convinced that, in view of the rapid growth in the scope of this co-operation and the diversity of forms it assumes, it is becoming increasingly necessary to weigh the various interests involved very carefully and to determine priorities when deciding to which enterprises the Government should lend its support. I also see it as the Government's job to ensure that the true character and aims of scientific and academic co-operation should not be lost sight of due to the influence of factors not themselves rooted in the endeavour to secure the further progress of science, as a thing in itself. Such factors are those which can come into play when international organizations in the political, economic and military fields begin to concern themselves with questions regarding the organization and equipment of teaching and research. Obviously, the Minister of Education is particularly concerned to see that the organization of – undoubtedly essential – international co-operation in the field of higher education and research should be attuned to the needs and interests of knowledge and its communication to younger generations – if not exclusively, at least in the first place.

This principle has always been my criterion in determining national policy in these fields. An endeavour should be made to use the same criterion, when it comes to working on the international plane to build up our scientific potential.

J. M. L. TH. CALS.
Minister of Education, Arts and Sciences.

NUFFIC – THE FIRST TEN YEARS

Actually there are two NUFFICS – the NUFFIC which existed up to 1955 and the NUFFIC we have known since then. The change was not in the foundation's organization but in its function.

As far as its organization is concerned, the foundation is headed by a Board of Governors on which a member of the board of curators and of the academic senate of each university in the Netherlands is represented. An Executive Committee is chosen from this Board on which each university is represented, either by one of its curators or by a member of its academic senate. This arrangement is designed to facilitate decision-taking on day-to-day business.

How was this form of organization arrived at? To answer this question it is necessary to look at the foundation's history, which begins in 1950. We can learn of this history from the written exchange of ideas between the Government and Parliament and the consequent public discussion in Parliament. It teaches us what the men who took the initiative at that time envisaged and what has come of their aims in the past ten years.

In the autumn of 1951 a bill was laid before Parliament proposing certain expenditure in connection with the setting-up of an international academic institute. It was accompanied by a concise and informative explanatory memorandum in which the first data concerning NUFFIC can be found, which data may be supplemented by the information the Government has made available in subsequent memoranda.

The basic idea was that higher education and science as a whole, for that matter, were becoming increasingly international in aspect. This called for a special organization in a highly special field.

The Government, and more particularly the then Minister of Education, Professor Rutten, were persuaded that our country should put its knowledge and expertise in certain specific fields at the disposal of other countries more systematically and more intensively than it had done, or had been able to do, hitherto. With this in view, the Government had appointed a commission in 1950 whose terms of reference were to investigate the problem of adapting higher education to international needs. The commission had recommended the founding of an international academic institute, one of whose aims would be to put the knowledge which the Netherlands had acquired concerning the East, especially as a result of the centuries-long tie with Indonesia, at the service of international co-operation in the field of higher education and research.

There was every reason for doing this. The political tie with Indonesia had been broken as a result of the transfer of sovereignty in 1949. The change left the Netherlands with a veritable arsenal of knowledge and science built up during the preceding period. The aim had to be to preserve at least that arsenal, and to use it for different, wider aims. Here lay a task for all those who had been devoting themselves for years to the practise of all manner of branches of knowledge, not only to do with Indonesia, but also to do with the Orient generally. The view was held that we should continue this work, that there should be continuity in this field, and that all the work done in the past could henceforth be put to good use in the form of aid to those countries which, socially and economically, were still relatively undeveloped.

The line of thought here was as follows : Dutch science had concentrated from of old on the study of man and society in non-Western areas. Oriental studies, subjects such as customary (*adat*) law, the economics of non-Western areas, tropical forestry and agriculture, tropical medicine, all these bore witness to the fact. What is more, Dutch studies in this field had won international recognition. The achievements of previous generations of Dutchmen should not only be preserved intact by the present generation, but widened and deepened. Moreover, there was an awareness that the rate at which things were evolving had accelerated since the war and that this called for a new approach and a new tempo in academic work.

Since it was tropical and sub-tropical countries who were suffering from a lack of academically trained man-power, it was important that tropical forestry and agriculture, tropical medicine, road and hydraulic engineering (research on which had never overlooked the tropics) should be taken further. It was thought, however, that the universities could meet this need themselves.

There was something else to be done too, however, and here a task was envisaged for a separate academic institution, that is to say, in the field of administrative, economic and social science. The first need it was felt necessary to meet was for a course of training designed for students mainly from tropical and sub-tropical countries who had already enjoyed a course of higher education but who wished to complete a course of further study of not too long duration which could increase their knowledge of the cultural and socio-economic problems resulting from technical and economic advance. It was thought that such a course would be of great importance to those students in particular who came from a country where this advance was taking place at an increased pace and who had been called on early in their lives to fill positions of responsibility in their country. The course would naturally have to be adapted to the type of education such students had received so far, and it would therefore have to be different in character from the courses given at the Dutch universities.

Secondly, it was advocated that students and graduates of the West should be given an opportunity to increase their knowledge and understanding of man and society in the areas where they would eventually be working, by means of a short course designed with their future employment in mind.

Finally, it was felt that the new institute could do good work in assisting foreign students anxious to follow some existing course of study in the Netherlands to gain admission to the Dutch universities.

This, then, was the function envisaged for the new institute. The Government was of the opinion that it should not take the initiative itself but that this was a task for the Dutch universities, acting as a body. It accordingly called upon the universities to take the initiative. This led to the setting up of a foundation by the heads of all Dutch institutions of higher education, the Netherlands Universities Foundation For International Co-operation, i.e. NUFFIC. I have already outlined the form of organization adopted for the new body in the opening lines of this article.

During the first years NUFFIC's main task would be to get the new international academy launched, an academy which would exist independently and at the side of the existing Dutch universities, even though, as is reflected by the form of organization adopted, these universities bore the responsibility. The Government confined its share in the new venture to the granting of a subsidy.

It was the intention from the very beginning that NUFFIC should have other functions too, though for the time being this was a secondary consideration only. I shall be returning to this further on.

Thus, to begin with, the main aim was to create and breathe life into the new institute. The commission on the adaptation of higher education to international needs had drafted a plan which we also find mentioned in the discussions in parliament. The institute would begin in 1952 with a two-year course for students from tropical and sub-tropical countries who had already completed a course of higher education but who wished to do advanced study in administrative science. In 1953 a beginning would be made with shorter and more specialized courses, lasting about six months, in administrative science.

The Minister, Professor Rutten, also advocated the desirability of six-week courses for students at home and from abroad who would later be working as technical experts in some non-European society, which courses would be designed to increase their knowledge and understanding of the people and the social set-up in the countries or areas where they would eventually be working.

The institute found a home in the former Royal Palace in Noordeinde (a street in The Hague) which Her Majesty Queen Juliana had placed at its disposal for the purpose. This building was also to provide living accommodation for the students, an arrangement which placed special demands upon the new institute. The Prince of the Netherlands was found willing to become NUFFIC's chairman. These generous gestures on the part of our Queen and Prince Bernhard bear witness to an interest for which we cannot be sufficiently grateful to the Royal House.

The new institute was christened "The Institute of Social Studies." In the spring of 1952 the Amsterdam professor, Dr. S. Hofstra, a celebrated sociologist, and the Leyden sinologist, Professor J. J. L. Duyvendak, had travelled abroad, the first to the East, the second to the United States, to spread information about the new institute. Professor Hofstra became its first Rector.

The Palace became available in the early summer of 1952 but its internal adaptation to its new function involved an enormous amount of work. Nevertheless, with some assistance from the Hague municipal authorities, the building was ready for its new purpose by September 1952. This work was directed by the first assistant director, Dr. J. le Poole, who, indeed, achieved the near-impossible in getting the premises ready so soon.

Thanks to Professor Hofstra's good offices a reasonable number of students had been attracted to the new institute. Professor Hofstra had played an essential role in planning the two-year postgraduate courses and was the obvious person to take charge of the academic side of the work. This proved to be a most difficult task. To begin with there had, unavoidably, to be a great deal of improvization and the programmes of study had to be adapted to the quality of the students enrolled. He had assured himself of the co-operation of a highly efficient staff, consisting in the main of Dutch professors and lecturers. The achievements of that first difficult year compel admiration. Sometimes there was very sharp criticism, in parliament among other places. I, myself, was a witness to that criticism. That is to say, in addition to my function of vice-chairman of NUFFIC, I was also a Clerk to the Upper House and I often thought that the criticism I heard there must have sounded very harsh in the ears of NUFFIC's directors. However, it did not prevent them going ahead with their work, with their pioneering work, involving all the difficulties such work always brings with it.

The institute was not spared its crises in these first years of its existence. It could hardly have been otherwise. New paths had to be taken. It was necessary to remain constantly aware of what the task of the existing universities was and what the task of the new institute. After Professor Hofstra's resignation – he preferred, after all, to devote himself once again entirely to his work as a professor at Amsterdam – there were frequent changes at the top. Prof. Duyvendak, the second Rector, of whom very high hopes were entertained, was struck down soon afterwards by an incurable illness and died in July 1954. We have very much to thank Professor Berg of Leyden University for in these early years. He worked for some considerable time at Professor Duyvendak's side and brought both wisdom and self-control to bear to solve many a difficulty. I feel gratitude also to Dr. Vlekke and Dr. In 't Veld, both of whom acted as Rector at times of crisis. And I must not forget the teachers and lecturers either and all the trouble to which they went to keep the institute going. It is not for me to trace the institute's academic evolution. This will be done on this occasion of its tenth anniversary by others, more fitted for the task.

Great and highly beneficial was the influence Professor Ferd. Sassen exerted too, as the representative of the Minister of Education, Arts and Sciences on NUFFIC's board of governors, a post he held for some considerable time.

As NUFFIC's vice-chairman, knowing I had the support of my chairman and my colleagues on the board – for which support I shall always be thankful – I often asked myself, especially in these early days, whether I observed the virtues of justice and prudence in sufficient measure. I do not hesitate to answer in the negative, and I hope that this admission on my part will be accepted and my administration of affairs be judged with mildness.

In 1955, as the result of government intervention, coming at the right moment, NUFFIC underwent a significant re-organization. The Institute of Social Studies acquired a larger measure of autonomy and its own bord of curators, while NUFFIC's Board had henceforth only a limited measure of supervision to exercise with regard to the Institute. Professor Egbert de Vries, who had been the chairman of the government commission on the adaptation of higher education earlier on and had since been fulfilling a function at the World Bank in the United States of America, became the new Rector. Under his leadership the requisite stability was achieved and the Institute now entered upon a period of vigorous development. The Government's original conception of what an "international academic institute" should do now became an established fact.

The problems involved by the fact that the palace premises also functioned as a student hostel were entrusted to a separate foundation, known as "Het Oude Hof" (The Old Court), a highly desirable move which meant that both the Institute of Social Studies and NUFFIC were relieved of an appreciable burden.

In this same year NUFFIC began to look round for a task it could perform in addition to its existing functions. Professor Rutten, the Minister of Education, had already indicated the lines along which this could be done, and it is useful to recall these. That is to say, the Minister was convinced early on that NUFFIC could develop into the agency of the combined Netherlands universities with regard to their activities in the field of international academic exchange. The actual words the Minister used were as follows: "The implementation of cultural agreements, the exchange of lecturers and members of the academic staff, the promotion of courses for students and young research workers in countries abroad and the contacts with UNESCO and similar bodies, these are all giving rise to an increasing number of organizational problems which call for joint consultation and sometimes for joint action too". It seemed to the Minister that NUFFIC could perform a useful liaison function here for the Dutch universities; and further a linking function by co-ordinating the work of the Institute of Social Studies and its sister-institutions which had already been founded or might be founded in the future, an example of which is provided by the International Training Centre for Aerial Survey at Delft.

It was no easy undertaking to get all this going either. The task was entrusted to a new board of directors consisting of Professor de Vries (as the link with the Institute of Social Studies), Dr. H. G. Quik and Dr. P. J. A. Idenburg, the last of whom had stood at my side, as an indispensable adviser, from the very beginning, in 1952. I knew, too, that I had the support of Prince Bernhard, who in the meantime had changed the position of chairman for that of honorary chairman of the foundation. Let it be repeated that for the rest there was no further change in NUFFIC's organizational structure.

Dr. Idenburg resigned shortly after this, a step I deeply regretted. Professor de Vries had his hands full with the Institute of Social Studies, though his energy is such that he still found it possible to give us his advice and assistance on many an occasion. But is was Dr. Quik who had to bear the largest share of the burden and he found himself confronted with the same difficulties as Professor Hofstra and his successors had had to contend with some years before : to give substance to NUFFIC new function and to win the trust and confidence of the universities.

He succeeded admirably by instituting two new courses at the Technological University at Delft – the International Course in Hydraulic Engineering which has become a great success, and a further Course in Sanitary Engineering which has likewise come up to expectation so far. In addition to this, special attention was paid to the matter of documentation.

All the same we must bend our efforts to expand NUFFIC's work as a university body. Recalling the task the Government envisaged for NUFFIC in 1952 (in addition, that is, to the organization of an Institute of Social Studies) it is clear that there is still a long way to go. It should be added that the same government's conception of the new Institute probably entailed too many tasks for NUFFIC to tackle all at once and that it has rightly deferred the execution of some of these. An example of this is provided by the wish to organize a brief course for students and graduates from the countries of the West, designed to equip them the better for their future work in tropical or sub-tropical regions of the world. The organization of such a course is, I know, now an item on NUFFIC's agenda.

For the rest I regard the initiative taken recently to set up two committees as of high importance. The first of these committees, under Professor V. J. Koningsberger's chairmanship, will concern itself with the aid which might be lent to build up *higher education in development countries*. The second, under Professor W. Schermerhorn's chairmanship, is studying the possibility of initiating courses and institutes of international training *in the Netherlands itself*. Both enterprises are entirely in accord with the task envisaged for NUFFIC at the outset.

When I retired from office as the chairman of NUFFIC last Spring and knew that I should be succeeded by a man of such authority as Professor J. Th. Thijsse of Delft, I expressed the hope that under his leadership and under the guidance of its present directors, NUFFIC would succeed in winning recognition as a university body in the sense I have outlined above. It is my further hope and wish that its directors will gain the trust and confidence of the Netherlands universities which will be indispensable, if NUFFIC is to succeed.

A. L. DE BLOCK *

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* Professor de Block was until recently chairman of the Board of Governors and of the Executive Committee of NUFFIC and at present represents the Minister of Education, Arts and Sciences on these bodies. He is a member of the Council of State (Raad van State).

State University at Utrecht (founded in 1636) – The University building

(By courtesy of the Department of Information of the University)

University of Amsterdam (founded in 1632) – The square of the main building

(By courtesy of the Information Office of the University)

NUFFIC'S FUTURE PROSPECTS

Events have willed that the chairman of NUFFIC's Board of Governors should be a hydraulic engineering man, and it is naturally difficult for him not to look upon NUFFIC, first and foremost, with the eyes of a Dutch hydraulic engineer.

As it happens, Dutch hydraulic engineers are quite accustomed to tackling their problems in co-operation with colleagues both at home and abroad. For at the present day these problems are so complicated that all the experience and equipment available throughout the world are required for their solution. Thus it is not surprising that ever since the conclusion of the First World War – with the exception of course of the duration of the Second World War – I myself have had to pay frequent visits to other countries so as to keep abreast with new trends. Likewise colleagues from abroad often visit the Netherlands to study recent advances made here.

This personal contact resulted in an attempt to give shape to the various means of exchanging ideas. Associations were formed to organize congresses where the exchange of ideas could take place on a multilateral bases. The Permanent International Association of Navigation Congresses and the World Power Conference are among the organizations of a respectable age.

Their numbers increased steadily and two groups evolved : one concentrating on the theoretical side of the problems and the other on the practical. The former gave rise to the Scientific Unions, which in their turn established a master-body, the International Council of Scientific Unions (I.C.S.U.). Some time later the practitioners of the applied sciences followed this example by founding the Union of International Engineering Organizations (U.I.E.O.).

All these organizations are non-governmental. Here and there a national committee is involved, but the central organization is in private hands. The United Nations have, however, displayed interest in the organizations and so UNESCO is now to be seen playing a paternal role.

It should not be imagined that the present intensive international exchange of ideas has any levelling influence. The environmental factor is too strong to allow that. Owing to their geographical situation many countries have acquired specialized knowledge and experience. Engineers in Austria and Italy may, for example, be expected to be highly skilled in diverting the course of mountain streams and constructing hydro-electric power plants, so that in this respect we can learn much from them. However, when it comes to making salt-water marshes fit for cultivation the boot is on the other foot.

And so side by side with discussions in which information is brought forward from various quarters, contact also takes place between one country able to provide information and another anxious to receive it. If our Italian friends do not advise us on mountain streams, it is only because these do not occur in the Netherlands. On the other hand we can give them the benefit of the experience we have gained in our polders, since such regions do exist in Italy, though to a lesser extent than here. This International Technical Assistance gains still more in importance when the receiving country does not yet have at its disposal sufficient specialists to tackle a frequently occurring problem.

East Pakistan is perhaps an ever happier hunting ground for the engineering of salt-water marshes than the Netherlands is, nevertheless Dutch engineers who have acquired their experience in the much smaller hunting ground on the coast of the North Sea are employed as advisors in East Pakistan. Obviously, this is not a satisfactory situation in the long run. The Pakistani engineer must be trained to take over the role of his Dutch colleague. And so it is that we are now taking the step from Technical Assistance to Educational Aid.

I have chosen the example of Pakistan, because it provided the impetus for starting a Course in Hydraulic Engineering at Delft. For me, at least, it came as a surprise to learn that in so many parts of the world there is interest in our particular problems and the ways in which we approach them. In the four years of its existence this course has become a full-grown member of the group of international courses held in the Netherlands, which Dr. Schermerhorn writes about elsewhere in this number.

Or is it really full-grown? On reading Dr. Schermerhorn's article closely, one observes that this course does not come up to the required standards, because its permanent staff is not sufficiently large for it to be able both to engage in scientific work at home and to spare members of its staff for temporary work abroad. This same situation is found in most of the other international courses at present offered in the Netherlands.

A reform will cost a lot of money, and what is more serious, a lot of manpower. So the question whether this is the right road to take must be given full consideration. This is a task for NUFFIC, which possesses the necessary information and connections to enable it to provide the Government with sound advice. It is to this end that the Schermerhorn Committee, mentioned by his Excellency Dr. Cals in his introduction to this number, has been set up, and it is to be hoped that it will soon be able to pass an opinion on this problem.

The study of the measures to be adopted at home is only one aspect ot the question how the Netherlands can best serve the cause of education in development countries. Only a relatively small number of students can come to the Netherlands. The vast majority must be trained in the development countries themselves. This means sending out more experts, not technical experts this time but qualified instructors. Aid can also be given in establishing, equipping and staffing schools of various types. NUFFIC has likewise set up a committee to study this problem, with Prof. V. J. Koningsberger, who has earned his spurs in this field, as its chairman. The Ministry of Education, Arts and Sciences and the Office for International Technical Assistance are both represented on this committee.

We are awaiting with interest the reports of these two committees. Will they tell us that we must let matters take their course and use our manpower for the many projects that will be of immediate benefit to our own country ? Or will they conclude that we can and must do useful work in this field and that the sacrifices which will undoubtedly be involved are justified. In the latter case, NUFFIC will have an important duty to perform, stimulating and co-ordinating the activities of the universities and technological colleges. The participation of educational institutes on a primary and secondary level may also be called for. In all events, we in the "Oude Hof" are prepared for any extension of our work.

And so the future activities of NUFFIC are still uncertain. This seems to me inherent in the nature of the Foundation. It must be ready to take up any work that lies on its path. It desires nothing better than to further the manifold objectives that are being pursued by the Dutch institutes of higher learning which co-operated to set up NUFFIC in the first place.

We are most willing to assist in the initiatives that are being taken by the members of the ever increasing number of Dutch universities.

J. TH. THIJSSE *

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* Professor Thijsse, the current chairman of the Board of Governors and of the Executive Committee of NUFFIC, lectures on Hydraulics at the Technological University at Delft.

THE ROYAL NETHERLANDS ACADEMY OF SCIENCES AND LETTERS

Some years ago Professor W. J. M. A. Asselbergs and the late Professor H. R. Kruyt devoted excellent articles in this Bulletin to the origins, tasks and activities of the Royal Netherlands Academy of Sciences and Letters on the occasion of its 150th anniversary, which was celebrated in 1958 and aroused marked interest both in the Netherlands and abroad.

Now, on the occasion of NUFFIC's jubilee, the Academy is pleased to take this opportunity of presenting a survey of the development and expansion of its activities over the last few years. Some repetition of what has previously been written is of course, inevitable.

The Academy consists of a Sciences Section with a maximum of 75 ordinary members and a Letters Section with a maximum of 60 ordinary members. Each section meets monthly. Once a year a joint meeting of both sections takes place.

The Letters Section comprises representatives of the "humanities" and the social and anthropological sciences. In the Sciences Section scientists whose fields range from mathematics to medicine hold office. In 1950, in order to guarantee a reasonable coverage of the many fields, this Section was sub-divided, thus allowing for a Free Section in which the intermediate and fringe areas in the world of science would find a place. This has strengthened the group of technical scientists, which only accords with the great importance of these branches of science, not merely to society at large, but also to the development of the pure natural sciences.

The interior of the fine seventeenth-century patrician residence, the "Trippenhuis", in which the Academy is housed in the heart of Amsterdam, has in recent years been renovated and fitted with modern facilities, so that the Academy is now able to give its members and many guests a more worthy reception than it previously could. Nevertheless, even after the purchase of the adjacent premises, 31, Kloveniersburgwal, the leasing of the former Anna Visscher School behind the "Trippenhuis" and the erection of a temporary structure in the garden, the accommodation no longer answers to present-day requirements; the library, in particular, which, since the addition of one of the largest collections of medical journals in the world, has grown to a very considerable size, is having to struggle with a serious lack of space.

The increase in the number of members of both sections has meant that the assembly hall of the Academy has likewise grown too small. However, thanks to government assistance a number of sites adjacent to the "Trippenhuis" have been acquired. On these sites a three-stage building plan will be executed, which may be expected to provide the Academy and its subsidiary institutions with sufficient space for a long time to come.

The Academy is not, as similar academies in other highly centralized countries are, a governing body which directs all scientific activity and to whose views and decisions individual research-workers must submit. The compass of its task is more in keeping with the free, democratic system adhered to in Dutch public life. This does not mean that there are no institutes under the more or less direct supervision of the Academy. On the contrary, mention may be made of the International Embryological Institute at Utrecht, the Central Bureau for Mould Cultures at Baarn, the Ecological Institute at Arnhem, the Hydro-Biological Institute at Loenen on the Vecht and the Delta Research Division of the latter institute at Ierseke. All these institutes are affiliated with the Sciences Section, while the Academy as a whole superintends the management of the Central Netherlands Brain Research Institute.

With respect to the Letters Section attention is drawn to the Central Commission for Folk Research in the Netherlands, which has existed for many years now and comprises five sections (dialectology, folklore, onomastics, local legal customs, and sociography), together forming a sizeable institute in the full sense of the word. To each of these sections other experts besides members of the Academy are attached.

In order to be able to fulfil its most important task of advising the government and directors of scientific enterprises, the Academy has often only to obtain a report from academicians who are experts in the field in question. In the Sciences Section the subsections are often consulted. However, on account of the restricted membership and the high degree of specialization and differentiation between the various sciences, it is not possible for all branches to be represented in the Academy. So it was decided, some time ago now, to create special committees, in part composed of non-members, whose task it should be to render advice to scientific enterprises of national or international importance. Thus the Sciences Section embodies the C.E.R.N. (Centre Européen de la Recherche Nucléaire) Contact Committee, the Committee for the Physical Anthropological Study of the Dutch Nation, and the Eclipse Committee, while national committees have also recently been set up to work together with the Special Committee on Oceanic Research (S.C.O.R.) and the Committee on Space Research (C.O.S.P.A.R.).

The Letters Section has formed a committee to work on the concordance and indices to traditional Mohammedan literature and the Ducange Committee which, as part of the international project for compiling a new "Ducange", is preparing a dictionary of medieval Latin in the North Netherlands up to the Age of Humanism.

An even more important step that has been taken in the last few years is the setting up of Councils composed along the same lines as the committees, but comprising more members, covering a wider field of study and in the possession of greater authority. These are only set up if there appears to be a genuine need for them. The first to be established was the Social Sciences Council, in 1958, while the Netherlands Biological Council, set up in 1923, was incorporated into the Academy in 1959 as an advisory body on biology. The establishment of a Medical Council may be expected shortly. These Councils are housed in the same building as the Academy, and like the Academy may also give unsolicited advice and, if necessary, set up ad hoc committees.

Some of the activities undertaken by the Sections over the past ten years are the following: the Letters Section reassumed work, previously suspended owing to lack of staff, on the critical edition of the so-called Liège Diatesseron of the Gospels. It is also preparing for the publications of the letters of Léon Walras which form an important contribution to economic history. Another committee is planning to participate in the deciphering and publication of the Qumran scrolls found in Jordan. Yet another is engaged in the collection of published and unpublished ancient Babylonian letters of great linguistic and historical significance. A committee which aimed at providing work for a Dutch authority in the rich and difficult field of early Eastern translations of Aristotle and other Greek philosophers has been dissolved, as another solution was recently found. The Sciences Section is editing a collection of the letters of Leeuwenhoek and the chief works of Simon Stevin. Volume IV of the latter publication was issued a short time ago. Also published this year was the autobiography of a former member of the Academy, Professor P. Harting. Reports on the dangers attached to experimental atom-bomb explosions, and on divining and earth-radiation have contributed to our knowledge of real and reputed dangers the threat of which oppresses mankind today. The Biological Sub-Section is extremely active in the field of ecology and hydro-biology in particular. This has led to the foundation of the previously mentioned institutes. In 1953 this Section also established a Cancer Control Council.

The Academy keeps up many connections with other bodies both at home and abroad. Its scientific meetings are open to all those interested, as is also its large library. Since 1947, in conjunction with provincial scientific societies, the Academy has held annual Academy Days in a different province each year. Both members of the Academy and representatives of the local societies then give lectures, frequently on subjects of special interest in or to the province in question. These lectures are collected and published.

The Academy is represented at visits by foreign heads of state, at important meetings and jubilees of national scientific societies, at congresses and symposia organized in the Netherlands, and quite often at similar functions abroad. Many foreign scholars who visit the Netherlands are guests at section meetings, and the lunches that precede the meetings form an opportunity for informal discussion between members.

At these meetings the members also often come into personal contact with foreign members and correspondents of the Academy. Sometimes the Academy itself maintains contact with international scientific organizations like the International Acedemic Union (I. A.U.), the International Council of Scientific Unions (I.C.S.U.) and diverse other international unions active in special fields. At other times one of the Councils affiliated to the Academy acts as a liaison body, as for instance in the case of the International Union of Biological Sciences. Mention has already been made of the committees that keep the Academy in contact with more specific international scientific bodies like the C.E.R.N., S.C.O.R. and C.O.S.P.A.R.

Naturally, the Academy also maintains direct relations with its sister-organizations abroad, and with the Flemish-speaking Academies in Belgium in particular. It advises upon the sending of Dutch scholars and scientists to congresses in other countries, and publishes their reports on such congresses annually.

The "Proceedings" of the Sciences Section, and the "Transactions" of the Letters Section give members and their co-workers the opportunity to publish the results of their work promptly.

Lengthier manuscripts may be published in the "Verhandelingen" (Papers). Apart from the aforementioned "Reports" and "Academy Day Papers", the Academy also published a Year Book and Lists of Additions to its very extensive periodical library. Here we should like to mention the excellent relations existing between the Academy and its publisher.

To conduct its many and varied activities the Academy has assembled an excellent staff. Nevertheless, if it wishes to retain its central position in the present-day boom in the world of scholarship and science, this staff will have to be enlarged so as to be able to cope with the growing demands made upon it. The necessary steps in this direction have already been taken by the Executive Board.

Thus in numerous ways the Academy endeavours to serve science in all its aspects, both nationally and internationally, and to make its work as useful as possible by keeping pace with the changing demands of the times.

B. A. VAN GRONINGEN,
President of the Letters Section

CAROLINA H. MACGILLAVRY,
General Secretary and
Secretary to the Sciences Section.

THE WORK OF THE NETHERLANDS ORGANIZATION FOR THE ADVANCEMENT OF PURE RESEARCH

When the Netherlands Organization for the Advancement of Pure Research (Zuiver Wetenschappelijk Onderzoek, Z.W.O.) was brought into being by the Act of 5th January, 1950, it already had a past history known as the period of the "organization in embryo". This initial phase began immediately after the Second World War and extended over a number of years. It was characterized by a preoccupation on the one hand with the meaning and indispensability of academic research to society and hence also with the growing responsibility of the government towards it, on the other with the practice of science for its own sake and its needs both in connection with, and independently of, education. The order of precedence here may of course be reversed, while it is difficult to say whether it was to the government that these questions first presented themselves or to the scholars and scientists. Some members of the first post-war government in the Netherlands were academic men, and representatives of the academic world and the government co-operated closely in all the initial phases. Three basic principles were borne in mind. No attempt should be made to bring research work under the supervision of governmental authorities, on the contrary it should remain entirely in the hands of qualified persons. Secondly, it should not be segregated from the universities but fostered and encouraged within the universities and, where necessary, outside them. And thirdly, a balance should be maintained between the humanities and natural sciences. The chief incentive behind the project was the way in which the Netherlands lagged behind many of its allies as a result of the war and also the lack of funds from which the country would need time to recover. Precedents for such an undertaking existed: there was the example of the Central Organization for Applied Scientific Research in the Netherlands (Toegepast Natuurwetenschappelijk Onderzoek, T.N.O.), founded in 1930. The Central Institute for Applied Mathematics, converted into the Mathematical Centre (M.C.) and the Foundation for Atomic Physics, converted into the Foundation for Fundamental Research into Matter (Fundamenteel Onderzoek der Materie, F.O.M., 1946) may likewise be looked upon as forerunners of the Z.W.O. But with the aforementioned principles in mind a close study of foundations and organizations which were already operating in other countries was felt to be necessary in order to learn from their experience and to acquire insight into the possibilities for the Netherlands. So this was the first step taken. From the very beginning one of the aims of the organization was to give qualified persons the opportunity of travelling abroad to acquire knowledge and experience unobtainable to the same extent in the Netherlands. While the principle that all research must be left entirely in the hands of qualified persons cannot be too highly praised, it can also be appreciated that the government desires to direct the financial aid which it is not only obliged, but also prepared, to devote to this work into definite and clearly defined channels. The far-reaching changes demanded after the war, the rights and obligations of the institutions of higher learning, co-ordination of research, co-operation between existing government institutes and industrial laboratories, the foundation of new organizations, all had to be considered in detail. Although these matters were not in themselves new, what was new, was the attempt to create a masterorganization within which necessary government intervention and future policy could take shape.

At the same time the practical application of fundamental research was not lost sight of. The welfare of the Dutch people, the need to start exporting once more, the firm belief that fresh insight which gives birth to new or improved methods of working and better products can only be obtained if fundamental research thrives, all these were motives behind the venture. Such a view was justifiable not only immediately after the war, but is so now, too, and to an ever increasing degree. What was called for was a satisfactory distribution of tasks between the different organizations. A solution was not hard to find: pure research would become the responsibility of the new organization and applied scientific research would remain under the aegis of the T.N.O. How tenuous the distinction between pure and applied research often is – since all scientific investigations are conducted in the world of reality – may easily be demonstrated. Subsidized by the Z.W.O., a number of botanists from Leyden recently went on a scientific expedition to the Cyclops Mountains in Netherlands New Guinea. On their return they informed journalists at a press conference that a giant rhododendron which they had sent with a great variety of other plants to the experimental station for arboriculture at Boskoop, could be expected to become very popular both in Holland and America among growers interested in improving the strains, while they had furthermore been able to draw the Forestry Commission's attention to an Araucaria forest which would probably be well worth exploiting. Another example in a related field, but now working the other way round, is the compilation of the *Flora Malesiana* which, according to the compilers' report, is arranged in such a way that various sections of it constitute a valuable mine of information for both pure and applied botany. Yet another example may be derived from the F.O.M. foundation's survey published on the occasion of its fourteenth anniversary, in which mention is made of research being carried out "in the interest of the public at large and in that of higher education"; and from the annual report for 1959 in which we read that a particular project is being observed with great interest by the United States of America, Euratom and German industry. It goes without saying that the organizations involved are well aware of the occurrence of such situations. This is ensured by the close and regular contact existing between the T.N.O. and the Z.W.O. A good example of the consequences that sometimes arise is the agreement reached between the Mathematical Centre, which incidentally also comprises a department of applied mathematics, and the recently established firm of Electrologica Ltd. (1956), which thanks its existence to fundamental research carried out at the Mathematical Centre. Here, however, one other special feature of the Z.W.O. Act should be recalled. In fields other than the natural sciences no definite line is drawn with regard to the work of the Z.W.O., so that its good offices may also extend to the application of research "so long as and in so far as no other statutory arrangements have been made to promote it". Psychological tests, the testing of schoolchildren and the diverse sociological investigations which are essential to the practice of these sciences, fall into this category. One of the most interesting instances in this field is the considerable subsidy granted in the early days of the Z.W.O.'s existence to the Foundation for Research into Morality and Criminality for an inquiry into the morality and criminality among the Dutch during and shortly after the Occupation. Undeniably, an instance of research done "in the interest of the public at large"! It must furthermore be borne in mind that, although, according to Dilthey, the very nature of the humanities and social sciences causes them to have objectives and methods different from those of the natural sciences, these different fields of scholarship and inquiry are still united under the contitution of our universities – if this is not already a lost cause – and also in the persons of the scientists and scholars. The Z.W.O. is constantly confronted with complex problems arising from this situation.

The disciplines which the Z.W.O. fosters may be grouped as follows: 1. Theology, philos-

Free (Reformed) University of Amsterdam (founded in 1880) – The main building

(By courtesy of the Office of the Academic Senate)

Roman Catholic University at Nymegen (founded in 1923)
The new building of the Faculty of Science

(By courtesy of the Information Office of the University)

ophy, psychology, education; 2. Law, economics, sociology, statistics; 3. Archeology, history, fine arts; 4. Linguistics, literature, ethnology; 5. Medicine; 6. Mathematics, astronomy, meteorology, technology, 7. Physics, chemistry; 8. Geology, mineralogy, mining, geophysics, geodesy, geomorphology; 9. Botany, zoology, agriculture, veterinary science. The Z.W.O. avails itself of the services of four large advisory boards, made up of independent scholars who enable the organization to be objective in its selection and to carry out its task of stimulating activity in an equitable manner.

It is recognized that the natural sciences require incomparably more expensive equipment than the humanities do. From this it follows that the way in which the Z.W.O. funds are distributed cannot in itself give us a realistic picture of the state of pure research in the Netherlands. It cannot, however, be denied that the organizations which are established more readily in the field of natural sciences than in the humanities also tend to have a favourable effect on both the quality and quantity of research work done. In this respect the humanities are at a disadvantage. Nevertheless, it should not be imagined that only individual work is done in this field. As many as half of the most recent Z.W.O. grants were allocated to projects being undertaken by more than one person. In the field of medicine individualism still reigns almost supreme, but here, too, new trends are now making themselves felt. Since co-ordination is also the task of the Z.W.O. and this demands a certain uniformity of planning, these new trends will be welcomed. The foundation of the T.N.O. Health Organization in 1952 has of course been of beneficial influence on the administrative side. In 1956 the Foundation for Chemical Research in the Netherlands (Scheikundig Onderzoek in Nederland, S.O.N.) was established to stimulate fundamental research in chemistry in the broadest sense of the word in universities, and other institutes. With this aim in view, it endeavours to bring about collaboration between research workers who are engaged in scientific research in the field of chemistry; research-units – originally three, now forty-one – have been formed to maintain contact between the laboratories. In the realm of international co-operation – so vital to the healthy development of the arts and sciences – a number of projects of particular importance have been realized along the lines originally envisaged at the time of the creation of the Z.W.O. By means of a fellowship-exchange scheme the Z.W.O. collaborates in all fields with the French Centre National de la Recherche Scientifique (C.N.R.S.) and with the Italian Consiglio Nazionale delle Ricerche (C.N.R.). It acts as an agency in the awarding of fellowships in the natural sciences granted by the North Atlantic Treaty Organization (N.A.T.O.) and the Organization for European Economic Co-operation (O.E.E.C.), while in addition to this there are the various types of scholarships which the Z.W.O. awards from its own funds. Over the years three categories have developed: fellowships, grants – of which increasing use is being made – and short-term travel grants. Obviously, these are mainly to facilitate travel and study abroad. In the humanities support has been given to a relatively large number of internationally organized ventures, such as the work on the great *Concordance et indices de la tradition musulmane*, the Encyclopaedia of Islam, the dictionary of mediaeval Latin and the bibliographies of Egyptology and of the history of religion; a dictionary of Palí is now in preparation. Furthermore, the Z.W.O. has either subsidized or entirely financed various Dutch archeological excavations in Rome, Egypt, Irak, Jordan and Turkey. Each year classicists are enabled to collaborate on the big international projects of compiling Thesauri of the Greek and Latin languages, thereby keeping the Netherlands in direct touch with new methods and advances in learning. Participation in the International Geophysical Year was fostered by the Z.W.O.'s aid towards the maintenance of two observation stations. Since 1950 the Z.W.O. has together with the F.O.M., been a party to Norwegian-Dutch co-operation in the field of nuclear energy, which resulted in 1955 to the establishment of the Netherlands Reactor Centre.

Likewise the Z.W.O. was an early collaborator in the European Organization for Nuclear Research (C.E.R.N.) at Geneva; the director of the Z.W.O. represents the Netherlands in the governing body of the C.E.R.N. The Radio Waves from the Sun and Milky Way Foundation, whose great radio telescope was built at Dwingeloo in 1956, is now planning a new type of receiver of waves from outer space, viz. a horizontally polarized antenna, three kilometers in length, which has received the approval of the O.E.E.C. and will probably be constructed in the near future as a joint Benelux project.

Returning to what is being done within the Netherlands itself, mention must be made of the large-scale activities of the F.O.M., which although it is only one item on the Z.W.O.'s budget, in fact accounts for two-thirds of the Z.W.O.'s expenditure. The F.O.M. is split up into six working groups for nuclear physics, mass separation and analysis, metals F.O.M.–T.N.O., molecular physics, solid state and research into thermonuclear reactions. It aids the Institute for Nuclear Research (I.K.O.), which is engaged on research relating to the cyclotron made available by Philips', Eindhoven, on a part-time (one third) basis, an arrangement that is now being altered. F.O.M. research is carried out in twenty laboratories and institutes in universities and in two special laboratories, the F.O.M. laboratory for Mass Spectography in Amsterdam and the F.O.M. Institute for Plasma Physics at Rijnhuizen near Jutphaas. An excellent opportunity to become acquainted with the work of the F.O.M. over the 1946–1959 period is offered by this organization's annual report for 1959.

One of the Z.W.O.'s most important tasks is the provision of subsidies for the publication of dissertations, other works of scholarship and certain periodicals. Dissertations are only financed if the customary subsidy from the Ministry of Education, Arts and Sciences is insufficient and the dissertation comes up to (or preferably surpasses) certain standards. Of the periodicals which have to struggle with financial difficulties, but are nevertheless considered to be indispensable to scholarship, eighty per cent are concerned with the humanities.

All over the world circumstances are favouring the expansion of the natural sciences as never before, and such growth must be aided in every conceivable way. But corresponding aid, although often of an entirely different nature, is required in the various other fields too. Therefore it is worth noting in conclusion that at the request of the Royal Netherlands Academy of Sciences and Letters and the Z.W.O., the Minister of Education, Arts and Sciences has appointed a commission to investigate the position of the humanities in order to ensure that the balance between the two great provinces of learning indispensable to a healthy culture be preserved. The Z.W.O. is awaiting the results of this inquiry with great interest.

J. N. BAKHUIZEN VAN DEN BRINK
Chairman, Netherlands
Organization for the
Advancement of Pure Research

APPLIED SCIENTIFIC RESEARCH IN THE NETHERLANDS-YESTERDAY, TODAY, TOMORROW

Modern society can no longer do without the fruits of scientific research, whether in the natural sciences or in the humanities. It has now assumed a structure in which the former, mainly intuitive, basis of action is no longer adequate. Moreover, the foundation of all scientific thought – a sceptical, inquiring approach instead of *a priori* acceptance – has gradually become common property.

With a view to the national economy, welfare, life and health, agricultural production and the food supply – indeed with a view to all aspects of our material existence on earth – we are *obliged to apply* the results of scientific research. Science is no longer practised for its own sake alone but also for the sake of society.

The need for this has been anticipated for some considerable time, almost everywhere, and to begin with in farming, on which man's very existence depends. This was so in the Netherlands too.

The depression which threatened Dutch agriculture at the end of the last century could only be met by action based on fundamental principles. Quality and production per unit of land and labour had to be raised to a higher level. Institutes – laboratories, research stations – were set up, the task of which was partly to render their findings suitable for application in the field and partly to indicate ways and means of bringing about an improvement by collecting information and subjecting it to analysis.

It was in this way that our country acquired its Farm Experimental Stations and its corps of agricultural consultants, whose job it was to assemble the practical problems which required solution and supply the solutions indicated by scientific research. This system has functioned excellently right up to the present day, and it can, indeed, be taken that the rapid advance Dutch agriculture has made and the high quality of its produce are both in large measure due to this excellent organization's work. One can say even more – that the whole population trend in the country is closely bound up with it. During the first world war it became recognized in all fields that a drastic revolution was taking place. It was the task of science – and, first and foremost, of physics, chemistry and technics – to indicate how the extremely heavy burden the war then imposed in every sector of life, even in a neutral country like the Netherlands, could best be borne. Leading Dutch scientists, including men of the stature of Lorentz and Went, to mention but two names, applied their foresight and bent their efforts to arrive at a form of organization which would unite all available opportunities of placing the fruits of scientific research at the service of the community. In addition, means had to be found to enable the scientists to take the initiative to supplement these results themselves and to respond to problems which might arise in any sector of society, no matter where.

The going was not easy. For those familiar with science and its potentialities there was every reason to make a real beginning with the job of constructing the road which had to be taken. But to those who were not scientists themselves, the reasons were not so obvious. Such men had first to be convinced; they had to be familiarized with the idea. Quite a deal of resistance was encountered, even among those working in the natural science field. They felt that such a development would amount to interference in the peaceful isolation in which science had so far been practised and would also, moreover, curtail the scientist's freedom. It would lead to science being subjected to the demands of profane society.

But things went ahead all the same. In 1930 a bill was drafted, the fruit of laborious committee work and almost equally laborious work at the Ministry. Its aim was to set up a new corporate body which was christened the "Central Organization for Applied Scientific Research in the Netherlands" and soon came to be known in the Netherlands as the T.N.O. (these letters being the main initials of its Dutch name). This name covered the entire complex of central and special organizations whose task it is to see that applied scientific research serves the public interest in the most effective manner possible.

The resultant Act of Parliament did not come into force until 1932. It is still in force today – and very much so too – as the following information, giving some idea of the size the organization has since assumed, will show.

A beginning was made in 1932 with a small Board, a small office, and almost no funds. The annual budget amounted to little more than the salary of the organization's secretary and founder, the engineer A. de Mooy, who, as special advisor to the Minister of Education, Arts and Sciences, had drafted the original bill at the Minister's request. For twenty-five years he served "his" organization – twenty-five years of struggle, expansion and success. The annual expenditure grew from a few tens of thousands of guilders to a sum which today, operational and building investment costs included, is approaching a figure of 60 million guilders and which will soon have exceeded this figure.

The Act had already foreseen that a single organization could never cover the enormous field where science and society must proceed hand in hand. Consequently, the Central T.N.O. Organization is competent to propose to various Ministries the setting up of what are known as Special Organizations. Such organizations remain closely linked to the Central Organization (the C.O.), since they receive their funds from the C.O. which also supplies their secretariats and administers their finances. Such an arrangement safeguards the co-ordination of the special organizations, an essential condition for efficient functioning. For the special organizations are themselves responsible for the direction their research takes, for their contacts with the outside world, and also for the way they communicate the results of their work, run their institutes and frame their programmes, this being a highly attractive aspect of the form of organization adopted. This does not, however, affect the special organizations' responsibility towards the central organization, nor the latter's towards the central government – and to the Department of Finance in particular – a second essential aspect of the form of organization adopted. Moreover, the Government, which bears the greater part of the operational costs and the entire cost of investment in buildings, is represented on the various organizations' boards by delegates of the Ministers concerned in their work. Such delegates take part in all consultations and though they do not enjoy ordinary voting rights, they do have the right of veto, the scope of which is laid down in the relevant Act.

So far four special organizations have grown out of the central body. The first, and by the nature of things the largest – it comprises almost 60% of the whole – is the Organization for Industrial Research T.N.O., the N.O. The post-war industrialization of the Netherlands, of course, stands desperately in need of this sort of service in the field of technical and technological research, and it can indeed be said that this organization has played no small role in the big switch-over in the national economy and in reconstruction since the second world war came to an end.

Textiles, shipping, the metallurgical and plastics industries, the timber and leather-processing industries, the machine industry and building – to mention but a few – owe a great deal of good advice, new possibilities and the solution to problems old and new to the T.N.O. Organization for Industrial Research.

During the Occupation of the Netherlands between 1940 and 1945 the food problem called for the closest attention. The special organization founded to deal with this performs research in the interest of the dietetics of the healthy and the sick and also of the foodstuffs industry.

The T.N.O. National Defence Research Organization receives its research commissions from the Armed Forces, land, sea and air. Its work is, of course, subject to security regulations, national and international. The fact that research on behalf of national defence has continued to be associated with civil research is seen as a great advantage, an advantage which is, in fact, felt in practice. This arrangement benefits both fields, enabling civil manpower to be used for defence research work and the fruits of fundamental defence research to be used in the civil sector.

The youngest of the special organizations, that for Health Research, was founded in 1950 and differs slightly in character from the others. It involves little co-operation with firms or industry. Neither is it the intention that general medical research – unlimited by its very nature – should be fostered by this organization. The field of its activity comprises everything which concerns physical, mental and social adaptation and welfare, research into which is not primarily the concern of the medical faculties at the universities.

Should it be asked whether it would not be appropriate to set up an agricultural T.N.O. organization, we would respond by referring the reader to our opening remarks. Agricultural research had already found its organizational form by the time the T.N.O. organizations were set up. Any attempt to ignore history and to force agriculture to follow the course adopted in 1930 was doomed to fail. In the T.N.O. National Council for Agricultural Research this sector of research is closely associated with the T.N.O., owing to the fact that this council has become a section of the organization, set up by the Central T.N.O. Organization. This provides an opportunity for the further development of co-operation, valuable foundations for which have been laid down in the Netherlands.

The situation outlined above appears to be a definitive one, and one might even gather the impression that it is a stationary one too. Nothing could be further from the truth. The great expansion of the T.N.O. organizations has taken place during the past decade. The 1932–1945 period could be described as the "running-in" stage. It was only after a brief, confused post-war phase, that the real growing process began – and began with a rush. Thus it is that the residue of improvization, changes of course, adaptation to circumstances, in short – of exploration – are everywhere discernible. Numerous improvements could still be made. If one turns one's eyes to countries abroad, one can see various trends of development which should be closely followed. Thanks to the 1961 Education Act the scientific institutions *par excellence* – such as the ordinary and technological universities – are now in full course of development. The T.N.O.'s excellent links with these bodies could definitely be organized in a way which would enable both to profit on a far wider scale than at present from the opportunities each has to offer. The need for this will be all the more urgent now that it is becoming increasing evident that the T.N.O.'s work calls for fundamental research, especially where such research is required for practical application. Between the pioneering work done at institutions of scientific teaching and research and the practical application of the findings, lies a field which is not actually very attractive to the pioneer, but where the digging sometimes has to go fairly deep all the same, before it is possible to think of applying the findings of the research done in the public interest. Purposeful fundamental research which must be undertaken for the sake of the practical application of its findings will be the field in which the universities, technological and otherwise, on the one hand, and the T.N.O., on the other, will have to complement each other – the former to help society via its applied scientific research and the latter to safeguard the institutions of higher education from descending to research which, though profitable, is not what they have been either designed or intended for.

We saw in the introductory lines how the whole of Western society is being strongly affected by the advance of science and knowledge. What are the results of this? It is not sufficient merely to record that they are important. Nor can we accept that the research worker should not be very concerned with the effect his work has or can have. Those whose work influences the shape of society will have to interest themselves in society's evolution and even, perhaps, make it a subject of their investigations. It may well be that here, too, there is work for the T.N.O. to perform.

Applied scientific research in the Netherlands has had a remarkable history so far. If the present writer is not mistaken, the future career of the T.N.O. will have many aspects equally as remarkable.

H. W. JULIUS,
Chairman, Central Organization
for Applied Scientific Research

INTER-CULTURAL COMMUNICATION

The more industrialization dominates a society, as today it is beginning to do even in African and Asian countries the more important is the role of higher education and research. Hand in hand with this development goes rapid political evolution which often has international repercussions and makes entirely new demands on existing institutions, particularly those concerned with higher education (international law, social sciences etc.). Such an accelerated development gives rise in turn to an increasing number of problems of a cultural, ethical and religious nature, not only in young countries in Asia and Africa, but also among European agricultural communities whose patterns of life are rapidly changing, and also among the rising generation of city-dwellers.

On the one hand this development opens vast perspectives in the realm of scientific discoveries, technical inventions and improvements in the standard of living; on the other, the constant changes in cultural patterns have made the whole world situation more unstable. Disturbances are making themselves felt everywhere. Aviation, firmer economic ties throughout the world, and the many means of telecommunication have brought countries so close together that differences in mentality, historical background and political behaviour appear all the more striking. Particularly since a self-confident attitude towards the rest of the world is often motivated by inner uncertainty, both in the case of young nations which have to give up their traditional ways of thinking and living, and in the case of the Western countries, which are confronted by new relationships and are fearful of losing their own values.

This is where the problem of inter-cultural communication comes in. For it cannot be denied that the increase in the exchange of ideas, either in writing or through international organizations, has not always led to an increase in genuine understanding. The reports and words come through, but they are not understood, or what is sometimes worse, they are misinterpreted. Recognition is not forthcoming in a situation in which disregard of another's point of view is no longer possible. In the new world which is emerging the various cultures are separated by far more than their geographical boundaries: mentalities alien to one another and divergent *Weltanschauungen* exist beneath a veneer of professional jargon, the work of interpreters and the techniques of the conferencetable. Thus, if higher education is to play a significant and effective part in present day society, it must recognize the need for intercultural communication.

An inter-faculty approach to this problem is called for. For some time now communication has been a subject of inquiry for various branches of scholarship. But they have all restricted themselves to their own particular domain and have tended to grow away from, rather than towards, each other. We have, for instance, international law which has led to the study of questions of communication between nations. Here the approach is a purely legal one, based on Western values. And then there is, as one of the oldest roads from West to East, the study of Oriental languages and society, together with which should be mentioned ethnology, which has latterly developed into cultural anthropology. In this, feeling for the substance of a culture plays a central part, whereas an inquiry into the difficulties of communication in our own Western society demands the ability to understand these difficulties from within. Such understanding may be sought in a variety of interconnected or sometimes barely connected fields, like psychology, psychiatry, the social sciences and social psychology. In technology, once again, communication is subjected to other methods of study. By measuring electric impulses, by the precise registration and isolation of disturbing influences analysable results have been obtained to experiments – especially in the field of electronics – which it has been possible to turn into formulae and which thus led to a new terminology and to an explanation of how information is transferred. In another field, that of biology, similar research into communication is being carried out.

Inter-cultural communication can only acquire definition if all the various branches of science are brought into play. Hence communication between these various branches themselves must first be ensured. On closer investigation it sometimes appears that a particular branch of science employs a specialized terminology which can only be understood from the way in which it is used. But it also happens that various disciplines employ an identical terminology ("communication", "message", "meaningful and meaningless", "information", "norms" etc.) which has an entirely different content for each of them. It is only when these difficulties have been eliminated that the way is clear for inter-cultural communication and questions can be asked about the nature of culture, social patterns, norms and mutual understanding. In this way a new approach, a new model as it were, may perhaps be found, since the traditional concept of communication in each of the disciplines individually has been seen to be inadequate. This inadequacy is not merely theoretical. It also has a direct bearing on the world situation: Western thinking and organization proceed from Western cultural patterns and international rules of play which are familiar to the West. Naturally, nations in an accelerated state of development react hostilely to this and will be inclined to prefer making themselves heard to listening. Thus it is not only the evolution of the sciences that calls for a new approach but also the pressure of international circumstances.

NUFFIC has taken the initiative in forming a special group to study inter-cultural communication. In doing so it had no intention of laying down the lines along which communication between nations and cultures should take place. The purpose was rather to come to a clear realization of the difficulties involved, and, if possible, to draw up an inventory of them. Such a course necessitates a close examination of the nature of these difficulties and of communication itself. The study-group comprises representatives of various disciplines, so chosen that the technological aspects of communication, social psychology, cultural anthropology, philosophy, linguistics, the study of Oriental languages and society, and international law are all incorporated. Initially, each of the departments of learning thus represented in turn brought up for discussion concrete points pertaining to the question of communication. It soon became apparent how difficult communication between these various branches of learning was. The terminology, the sphere of interest, and the methods of working all differed widely. It was only with the attainment of a certain degree of understanding and the correction or adjustment of notions in one field to those of the others that a somewhat better insight into the problem of inter-cultural communication was acquired.

The first point to emerge was the need for accurate information. But information that is connected with the relation between different systems of values and historically rooted traditions can never be entirely unambiguous. Nor should extraneous information be entirely disregarded, since it is not merely a question of the passing on of a simple message, but of contact between human beings with different individual and social attitudes. Besides technological questions relating to the transfer of information, questions concerning human language soon occupied a central position. To what extent can man express himself in his language? Or should it be said that the greater his capacity to express himself in words, the greater his intellectual stature? Man lives in society. What is the meaning of a particular system of values, and can it be stated that, despite all differences, a uni-

Technological University at Delft (founded in 1905)
Some of the old and new buildings

(By courtesy of the Publicity Office of the University)

Netherlands School of Economics at Rotterdam (founded in 1913)

(By courtesy of the Department of Information of the School)

versal system of values is gaining acceptance throughout the world? Might not, for example, the struggle against poverty, want and disease be claimed to be such a system? In all events, a comprehensive code must be evolved, on the basis of which genuine communication may be achieved. This means setting international law on an entirely new footing.

The study-group is engaged in sounding out the possibilities of communication without any fixed concepts at its disposal. The rapidly changing situation in the world demands fresh thinking and first and foremost a re-appraisal of our own methods of formulation and of the traditions which find their roots in Western European history. The question whether certain values are of relative importance only is being raised in the hope of finding those features which society and the diverse branches of learning have in common in the various cultures of the world.

C. A. van Peursen. *

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INTERNATIONAL COURSES IN THE NETHERLANDS

Volume V, No. 1 of this bulletin contained, on page 39, a complete list of the international courses provided in the Netherlands. Instead of repeating this information, it will probably be more useful to give an account of the origin, character and purpose of the work done by commenting on a number of these courses. Although it is desirable for me to confine myself to the existing situation, my description of the trend things have taken will automatically lead to some indication of what can be expected in the future.

From the very beginning of the 20th century there has been a considerable influx of students from other continents coming to study at European universities where the language medium was English, French or German. Students from the colonies who had been educated in the language of the mother country naturally chose that country for their European studies. Thus up to 1950 the Netherlands received a large number of students from Indonesia who had learned to speak Dutch. The fact, however, that Dutch was the language used at the Dutch universities meant that very few students came from other countries. The large number of students coming to Switzerland, Austria and Germany made it clear that it was not only colonial ties which determined the choice of country, while the relative difficulty involved in learning either German or Dutch can hardly explain why there should have been practically no non-Indonesian students coming to study in the Netherlands prior to 1940, apart from a few individual research workers attracted here by the reputation enjoyed by certain Dutch professors. Another factor influencing the students' choice of country, in addition to the influence exerted by propaganda and tradition, is the amount of scientific literature available in a different language. Thus one sees that it was necessary for there to be an unprecedentedly large stream of cheap books in Russian which make the learning of the Russian language a worthwhile undertaking for thousands of students in Africa and Asia.

These considerations persuaded the Netherlands roughly about the time when sovereignty was handed over to the Indonesians in Indonesia in 1950, to realize that the country would not only have to redirect its overseas trade, but would be obliged to participate in activities along a broad international front in the field of education as well. It is true that immediately after the war the University of Leyden was receiving medical students from America, the Technological University of Delft a number of Norwegians and the Agricultural University of Wageningen both Turkish and Egyptian students, but this was not looked upon as reflecting the normal pattern of things. The language problem involved a great loss of time and energy and indeed made it necessary for the Egyptian Government to appoint a special Egyptian director of studies for the group of Egyptians working at Wageningen. An inter-university commission appointed in 1950 came to the conclusion that our Dutch share in international education would have to take the form of special post-graduate courses given in English or French and confined to a limited period of two years at most.

At more or less the same juncture of time the idea of international technical assistance had acquired shape, not only in the American Point Four, but also in the United Nations. The combination of these two considerations led in 1950 to the setting up of the first special International Training Centre for Aerial Survey at Delft, which was founded by the Technological University at Delft and the Agricultural University at Wageningen jointly. It was particularly the work of the U.N. technical assistance scheme which stimulated the foundation of this training centre, now known as the I.T.C., whose first course commenced in 1951. The interest shown in this Centre is to be attributed in part to the great significance which aerial photography has in compiling an inventory of natural resources and as a basis for all manner of agricultural and technical schemes. Five different courses of study were provided, of which three are concerned with "natural resources inventory".

A year later the Institute of Social Studies opened its gates. This institute was the child of the Netherlands Universities Foundation for International Co-operation, nowadays known to us all as the NUFFIC. The choice of social studies as the field in which the new institute was to work was in the beginning largely determined by the existence in Holland of many Dutchmen with administrative and other experience in Dutch territories overseas. It was not long, however, before this was seen to be an unsatisfactory point of departure. A speedy re-orientation of the institute's activities under the present Board of Governors led to the success and flowering of the institute's work, both in providing assistance to development areas and in functioning as an independent academic institute. Nowadays in addition to social studies the institute provides special courses in subjects of such great importance to the governments of development countries as public administration, social welfare policy, economic planning, national accounting and, finally, comprehensive planning.

The courses given at both these institutes differ to a certain extent from the courses mentioned in the following paragraphs. For instance, the institutes concerned both have their own premises offering complete accommodation to about 60% of the students registered on their rolls – not, unfortunately, to the full 100%. Even more important is the fact that they both have their own staffs, thus providing an opportunity for them to carry out their own scientific work. It is due precisely to this that institutions of this kind come to occupy a place of their own and to acquire status in the international world, their prestige being less dependent on the fame of university and other teachers working outside them. The present writer has subscribed to this principle since 1951 and the International Training Centre for Aerial Survey at Delft, set up to provide instruction in a comparatively arbitrary subject, would not have developed as successfully as it has done, if it had not had its own staff consisting of about twenty academically trained instructors, permanently at the students' disposal, with the aim of putting the restricted time they have available for the work to the best possible effect.

As soon, however, as such an institute no longer seeks to direct scientific development in the subjects it teaches, as many a university laboratory and also the I.T.C. at Delft seek to do, the situation is completely changed. In this new situation the courses are confined to providing instruction on the results achieved elsewhere by scientific and technical work. Thus, in order to make sure that practical adaptation to the latest ideas and experience is not lost sight of, technical courses in particular will require the co-operation of teachers occupying positions of responsibility in the practical field. This principle one sees consistently applied in a set of five technical courses, lasting sometimes for six months, but more usually for a full academic year. These courses are:

a. Hydraulic Engineering (Technological University at Delft and NUFFIC; since 1957)
b. European Course in Sanitary Engineering (the same institutes; since 1960)
c. International Course in Building (at the Bouwcentrum, Rotterdam, since 1958).
d. The Philips International Institute of Technological Studies, Eindhoven (since 1957)
e. Courses on Small-scale Industries (at the Research Institute for Management Science, Delft, since 1955).

This series of courses includes two subjects which it is particularly appropriate for the

Netherlands to teach: in hydraulic engineering, rivers, coasts, harbours and land reclamation are matters which have been a Dutch speciality for centuries. In addition, physicists and chemists from all parts of the world value an opportunity to increase their knowledge of special subjects and to acquire further experience in the celebrated Philips research and industrial laboratories at Eindhoven. It was this latter consideration which caused the Philips Company to found the institute mentioned under d. above.

The Course in Sanitary Engineering originated in a different manner. The pollution of the water and the air in heavily industrialized centres of population provided the stimulus for a new Dutch enterprise which has met with success, owing to the support it has received from the W.H.O. and the O.E.E.C.

These five courses have something in common with the five courses given at the Delft I.T.C. and the six given at the Institute of Social Studies, in that degrees or diplomas are awarded after the courses have been successfully completed. The Institute of Social Studies awards a Master's Degree, recognized in Dutch legislation, while the I.T.C. has instituted a Bachelor's and Master's degree for certain courses, which degrees, like those awarded by the Institute of Social Studies, are recognized by universities abroad.

In 1960 the present writer suggested that the NUFFIC, among others, should grant degrees in respect of various courses. Experience has, it is true, shown that the value of such degrees, like that of many awarded by universities, is determined by the reputation of the institutions which grant them, and that these courses of study intended for students from abroad do not call for the diplomas (at times differing completely in nature) to be standardized on the basis of a single Dutch norm. This might in fact prove a disadvantage. Nevertheless, I believe that some joint arrangement could offer an advantage. This advantage would be felt particularly by those to whom these degrees are awarded. Practice has shown, namely, that nearly all those students taking courses appreciate the award of some diploma or other. A diploma, however, is not the same thing as a university degree, and this is sometimes looked upon as an objection by those who have already obtained a degree in their home country.

This does not of course present any problem in the case of short courses lasting for only a few months, such as are provided by the Institute of Social Studies and by the International Training Centre in addition to their full-length courses; nor does the problem arise in the case of courses of only a few weeks' duration like the NUFFIC's Science Seminars. The most important course in this group is the "International Training Course on Methods and Programme Building in Agricultural and Home Economics Extension", organized each summer since 1957 by the International Agricultural Centre at Wageningen with assistance from the Food and Agricultural Organization (F.A.O.). In the past 9 years more than 900 people coming from 70 countries have followed this four-weeks course, each participant going away with a certificate.

Although Dutch agriculture, like Dutch hydraulic engineering, could supply any number of subjects suitable for international courses of great value particularly to development countries, a beginning has yet to be made in Wageningen with courses of lengthy duration. There are, however, plans for beginning a three-months course in "Land Drainage" in 1962.

Mention has often been made in this bulletin of the Hague Academy of International Law which held its 32nd Summer Session in 1961 and which registers more students each year than all other international courses together. This admirable institution, founded much earlier than the courses I have mentioned so far and also quite independently of the considerations which led to their institution, calls for no further comment in this context. Let me turn instead to the development countries' need for trained men at the sub-university level, especially in agricultural and technical science. For the purpose of international technical assistance it is necessary to create a possibility of giving university and secondary education in the same subject through the intermediary of special educational foundations. The International Training Centre at Delft has proved that it is possible to do this, even though it requires an extra effort. Here the need for such a foundation to have its own institute with its own staff, both independent of the Dutch universities, becomes all the more urgent.

A further extension of international education in our country along the lines indicated in the preceding paragraphs is to be anticipated. A body should be set up in and by NUFFIC which, working in close co-operation with the Dutch Government's Office for International Technical Assistance‘ could help to satisfy the educational needs of the development countries. Such assistance does not operate merely by receiving students from these countries but also by sending out to them teachers from the pool. By doing this, one can help local universities to enable students to attain their basic education at home so that they need go abroad only for secondary and advanced, i.e. specialized, education. This would obviously have to be a long-term programme but at least it has a definite policy. That our own academic and scientific potential is reinforced by such measures has already been proved by such institutions as the Institute of Social Studies and the International Training Centre for Aerial Survey.

W. SCHERMERHORN*

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* Professor Schermerhorn is the Director of the International Training Centre for Aerial Survey.

HIGHER EDUCATION IN THE NETHERLANDS

Defining its place

The university is a reflection of life itself and thus of infinite variety. It has almost as many forms as there are universities and it is difficult to appraise its various differences in structure and mode of existence on the basis of one's own traditional standards. The experience of finding things utterly different at some other university induces an understandable tendency to reject the strange and unfamiliar. This, however, can lead to misconceptions. A stay at a university abroad becomes valuable as soon as one attempts to pin down the points of difference and to understand them in the light of the developments which produced them and the influence the spirit of the country itself and its people has had upon them. Much that seems strange at the time of one's initial encounter with a university in a foreign country can be attributed to different ideas concerning the function and appreciation of science and the aims and function of the university. With international contacts increasing in the university world, it is important that account should be taken of this.

When a professor or student from an Anglo-Saxon university comes into contact with university life in the Netherlands, he will be struck by the different position the professor occupies here, by the absence in the ranks of university teachers, of readers or of associate and assistant professors; by the fact that the university must be open to every pupil who has completed his work at the secondary school; by the relative paucity of staff; by the receptive attitude of the students; by the length of their study; by the number who fall by the way and the slightness of the guidance they receive; by the different methods of instruction and examination provisions; by the difficulty of comparing many of the aspects of student life with attitudes and customs in his own country. It is only when he speaks of science and of teaching in the latter years of a university course which, as it were, is entirely concerned with science, that the feels he is on common ground. But, for the rest, both the organization of the teaching and the academic traditions he encounters abroad breath a spirit largely alien to him.

The Dutch historian Huizinga ascribes two of the weaknesses in the structure of the Netherlands universities to the way in which they came to be born. They did not come about as the result of private initiative, as the medieval universities did, but were founded by the State. The State did indeed leave them a large measure of freedom, yet they nevertheless lacked that corporative independence which was so characteristic of the first universities. This explains why the ancient idea of the university as a "universitas magistrorum et scholarium" has never struck roots in Holland.

Under the State's wing the university was unable to order its affairs as it wished, while the development of a strong sense of community among its teachers and students was impeded. A contributory cause of this was the lack of an intermediate group between the professors and the students, which, to quote Huizinga "closely associated with the university, form a link and intermediate body. The "magistri" were not "a limited, self-contained body of professors, as we might suppose, they were all people who had obtained their degrees and thereby a licence to teach. They were the people who formed the most powerful and vital factor in the university – the young men, fired with enthusiasm and inspired by their newly acquired, still effervescent knowledge, with all the passion for the new and the lively which teaching calls for – they were teachers, yet, in addition, still students".

The lack of such an intermediate group as a link between professors and students caused the centre of gravity in academic life to come to lie almost exclusively in the student societies. The university as such bears no responsibility for the moulding of the student's personality. Professors and students form two separate groups, only weakly linked to each other. The pronounced expansion of the academic staff since the second world war has brought hardly any change in this situation. This staff is being associated on a growing scale with the work of teaching and might in time provide the intermediate corps at present missing between professors and students, as it does in Anglo-Saxon universities, though for the time being their position is too vague for them to be able to do so.

During the days of the United Republic, when the State's authority was highly decentralized, its influence on the universities was still only slight and for the most part made itself felt only indirectly. The French Revolution effected a change. During the period of French rule the universities lost their independence altogether and when the country recovered hers, they were not so fortunate. They became incorporated into the system of central government which characterized the new political form of the Kingdom of the Netherlands. They became state institutions and their administration a branch of the civil service. Hardly any room was left for self-government.

It would, however, be wrong to conclude from this that the universities had now become willing instruments of the State. Freedom of knowledge and of academic education was never at stake. These academic values were in safe hands with the State. In other fields of education resistance developed to the State's influence, but at the university level the idea of laying down the freedom of research and teaching in legislation never even arose. The explanation has to be sought above all in the reform of the German universities at the beginning of the 19th century, which had a great influence on ideas concerning the universities at the time.

The movement for reform resulted from the idealist philosophy which conceived it as the task of science to serve truth. The university was seen not so much as an institution of education, where the knowledge and culture of preceding generations was passed on to the young, but rather as a place where scientific research could be carried on unimpeded, teachers and students meeting each other in the common practice of science in the service of Divine Reason which, incidentally, enables man to develop his faculties better than anything else. This goal could only be aspired to if both instructors and students were allowed to work on their own, in freedom and unhampered by other considerations. Thus the professor should enjoy "Lehrfreiheit" – he should be left free to do research on any subject which engaged his interest and to publish the results and communicate them in his teaching. To this end, he should ensure that his mind remained unprejudiced and detached. He pursues knowledge for its own sake and remains aloof from the events taking place in society around him, unconcerned about the practical ends to which his knowledge may possibly be applied. The consequence is that neither the State nor society – nor even the university – may interfere with his work and teaching. The student, too, should be entirely free, should enjoy "Lernfreiheit". In other words: no prescribed course of study and no obligation to attend lectures. His high academic calling presupposes that he will be mentally mature. Provided he enrols at the university and pays the requisite fees, he shall be free to attend all the lectures in any faculty – or none at all. He must decide for himself whether he wants to follow his instructor's teaching or not, and also how many years he will devote to his studies. Guidance in these studies he has no need of. He will not be obliged to give evidence of the progress he is making to anyone. He will be admitted to the university examinations regardless of the time he has spent preparing himself for them, regardless of the "where and how" of his learning. The only condition imposed, apart from the payment of a small fee, will be a certificate showing that he has passed the previous examination.

According to this conception of things, the State, though in theory imposing no limits on its ultimate authority in matters of education, was called upon to observe great restraint in its dealings with the universities as academic institutions. The principle that science and teaching should enjoy unlimited freedom did, indeed, underlie the old Higher Education Act of 1876, which contained little more than the statement that there should be a board of governors to exercise a managerial and supervisory function, a senate divided into faculties and a list of examination subjects. There is no trace in it of regulations to guarantee efficient teaching or of any provision charging the universities to ensure this. Everything is left to the individual professors, while even the students are not subjected to any rules or called upon to meet any obligations.

In the light of these ideas, it is clear that the universities have been able to develop in the strictly academic sense and have also ensured a high level of instruction. This does not mean, however, that this instruction has always been given efficiently.

As long as the university remained small, little risk was involved by the weakness of its structure. But when knowledge began to expand in all directions and university teaching could not escape the partitioning process of increasing specialization, and as, simultaneously, even larger numbers of students poured in through the university's gates, the university proved to have insufficient powers of resistance to meet these disintegrating influences, nor did it see any opportunity to adapt its teaching in time to the new developments.

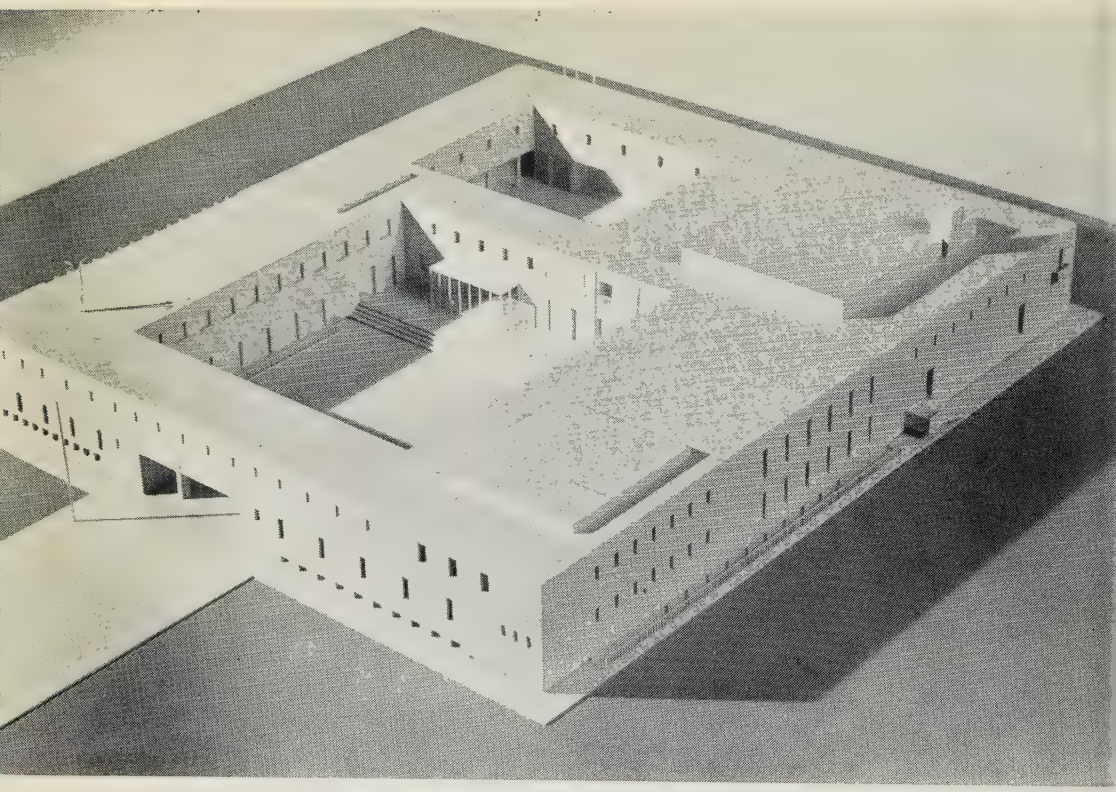
Generally speaking, the professors are only vaguely aware of a common responsibility for the efficient organization of the student's course of study. The situation is otherwise in the Anglo-Saxon universities, which do not take some scientific ideal as their guide but lay all the emphasis on the demand that teaching should equip students for their future task in society. The aim they have before them is not to serve knowledge but the education of the complete human being (and not of his intellectual capacities alone). The ideal they pursue is a certain attitude to life which equips the academic man to find his way in society and has taught him how to tackle the problems with which life outside the university's walls will confront him.

Yet, in doing so, they do not neglect science. They expect from their professors that they shall make their contribution to the advance of science, partly for the sake of the teaching, which cannot maintain an academic level if the instructors do not keep in the front line of knowledge in order to be able to lead their students there too. However, in their teaching they assume that only a small percentage of the students are destined to become independent scientists or academic men. It is only in postgraduate teaching, which is followed by no more than about one-fifth of the students, that they allow the demands of science and teaching largely to correspond. The other four-fifths of the students go out into the world, after obtaining their bachelor's degree. This has the advantage of enabling them to commence their careers when still fairly young. High demands are placed on these undergraduates during their course. Close contact between instructor and student, necessary to provide guidance during the study and full participation in the life of the university community, are looked upon as indispensable conditions for a sound education. Consequently, the Anglo-Saxon universities ensure that equilibrium is maintained between the number of teachers and the number of students and provide such accommodation as will foster the student's active participation in academic life.

This different conception of university education, attuned not to science but to the

Agricultural University at Wageningen (founded in 1917)

(By courtesy of the University's Department of Education and Science)



Roman Catholic School of Economics at Tilburg (founded in 1927)
Model of the new building

(By courtesy of the Department of Information of the School)

moulding of a certain type of human being, satisfies the real needs of a developing society better than the other does. The transition from secondary education to independent work at the university is more gradual and consequently gives rise to fewer hitches.

The idea from which one proceeds in the Netherlands system is that the general preliminary training (artes liberales) has already been provided at the secondary (grammar) school. But this is only partly true. Moreover, this education remains very much school training, right to the end. When the student arrives at the university he has still no conception of independent study. Since he has been treated as a juvenile for so long, it is not surprising that he should hanker after the unlimited independence the university grants him. But that this abrupt transition to such untrammelled freedom should be more than many students can take is not surprising either.

Nevertheless, the large number of students at our universities who abandon their study before its completion cannot be attributed to these differences alone. It must also be attributed to the system of free entry to the university in the Netherlands, whereby the university does not itself decide whom it shall admit and whom reject. The Netherlands universities are obliged to allow access to their examinations to all who can produce the requisite secondary school leaving certificate. Selection on these lines provides less guarantee that the student will complete his study successfully than if the university is able itself to decide for which persons it will accept responsibility. But the State, which has to see to it that everyone has, as far as possible, an opportunity to develop his gifts by means of education, can hardly leave the entire process of selection to the universities.

Attention should, however, be drawn to the advantages as well as to the dangers and drawbacks inherent in the Netherlands system of higher education. To the gifted student capable of putting his time to good use both in his study and in student life, the unlimited freedom he enjoys at the Dutch university offers a greater opportunity to pursue his interests and to develop himself his own way than a system which requires him to stick to the requirements of a more rigid course of study. It can be put this way: that higher education in the Netherlands is designed for the ideal student – "l'élite pour l'élite" – whereas the university in Anglo-Saxon countries has tended to adapt academic education to the needs of the average student.

State intervention on a large scale offers the advantage of there being a public guarantee that teaching will not be neglected. Now, especially, when the equipment of the laboratories and the large staffs the universities require have become so expensive that the cost could not possibly be met from private sources, state support has become indispensable. The university's dependence on the State makes it independent of industry and business, which have a large stake in the progress of science and in wide-awake teaching. They would undoubtedly be able, and ready, to provide more aid – but this would involve a danger of society exerting too powerful an influence on the university's future.

State support extends to cover the private institutions of higher education as well as the State universities. Legislation provides that these private institutions shall receive up to 95% of their revenue from the State. It also provides them with a guarantee that the State will not interfere with university policy, as long as their expenditure remains within the limits of the normal equipment and upkeep of a university or other institution of higher education. All the State requires is that they should keep to the faculty system adopted at the State universities etc., and to the Academic Statute which in the main lays down regulations for the organization and number of examinations and the award of degrees. This very considerable aid granted by the government to private universities and other institutions of higher education is unknown in countries outside the Netherlands, and it demonstrates that it is indeed possible for material aid from the State and private education free from interference to go hand in hand.

The point of the arrangement whereby the central government lays down broad regulations for the examinations held at all universities and institutions of higher education is to guarantee the academic level and the equal validity of all academic degrees, diplomas and certificates. A student may have any number of reasons for preferring to study at one university or another, but in the Netherlands he does not have to do so because the level of study at one university is higher than at another.

The outline we have so far given of higher education has set a few of the chief characteristics of the Netherlands universities against their historical background. The developments of the last twenty years have yet to be mentioned. The war awakened higher education in Holland out of a long period of sleep. There have been two main lines of development. During the Occupation, when, influenced by the threat to all our spiritual values, we began to see our traditions, as it were, in better perspective, the weaknesses of our university system became very obvious to us. What the university chiefly needed was a mental and spiritual renaissance, but it was too dependent upon the central government to be able to perform its task on behalf of science and society. It was consequently urged that our institutions of higher education should be granted the independent status of bodies corporate in an Education Act.

The other factor which set higher education in motion was the growing realization of the significance of science and academic education to the country's material welfare. As a result of the war the Netherlands had lost important sources of its welfare and it saw itself obliged to industrialize. In view of the vital role played by research and higher education in this process, one of the first things to be done was to improve and expand courses of training for engineers. To achieve this end too, it was necessary that the Technological University should be strengthened as an independent institution.

The outcome was that the universities and other institutions of higher education were granted the legal status of bodies corporate (corporations) by an Act of 1959, while at the same time they acquired a greater measure of independence as regards their management and administration.

The purpose of the new Act is to lay the formal foundations on which the universities etc., can develop their administrative capacity so as to be able to bear the responsibility they now have to the State and to society for research and teaching. This independent responsibility of theirs is further underlined by the provision laying down that the faculties and departments must provide for the organization and the smooth operation of university teaching. This gives legal support for improvements in teaching at the universities, which cling less tightly to the 19th century ideal, now partly superseded by a shift in function of science and learning in modern society. There is now a noticeable endeavour to pay more attention to the students both inside and outside the lecture hall. An increase in the number of professorial chairs and a considerable expansion in the academic staffs provide a better possibility of doing this. A beginning has been made with tutorial guidance by calling in the services of tutors and instructors. Deans of studies, unknown before the war, are now taken for granted. University doctors keep an eye on the students' health and safety. Subsidies for student housing accommodation, dining halls, cultural activities, sport etc., all demonstrate that the university now provides for far more than the students' intellectual development alone.

The new Act, too, regards this alone as an inadequate aim for university education to pursue. The universities must also pay attention to the task of fostering a sense of social responsibility. This signifies an unmistakable swing in the Anglo-Saxon direction. In the Report of the Committee on Australian Universities one can read: "It is the function of the university to offer not merely a technical or specialist training, but a full and true education, befitting a free man and the citizen of a free country".

Another sign of keener awareness of the dangers inherent in the all but automatic coupling of teaching to the development of scientific knowledge is reflected in the Act, since it has deemed it necessary to make it part of the university's task to foster an understanding of the links joining the different branches of knowledge. After the war, acting on their own initiative, the universities had already instituted a "studium generale" to counteract the dangers of over-specialization. So far this has been only partially successful, since it has not been sufficiently integrated into the students' other work. Ways in which general educational courses can be incorporated into the special training given at the technological universities are at present being studied.

The students, too, are calling for changes to meet the needs of the day, and it is at their instigation that the question whether present teaching methods and the examination system meet the requirements of an efficient organization of their study is now under review.

Developments in society also exert a direct influence on the evolutionary process the universities etc., are now experiencing. Industrialization can only thrive if nurtured by flourishing academic activity. There is a constant interaction between pure science, applied science and the actual application of the findings of science. "Science for science's sake" is an attitude which has become untenable. University science can only retain its vitality if it is in close contact with intellectual, cultural, technical and socio-economic trends in a society subject to incessant change. The situation is not without its great dangers, but no one would seek to thrust university life back into the ivory tower in which a too narrow observance of the ideal of the supremacy of knowledge locked it during the 19th century.

Many other aspects of the process of change could be mentioned. The process is, indeed, very gradual and sometimes so slow as to be barely discernible, but, nevertheless, it is always going on. Nothing has been said as yet of the extension of the existing universities and of the founding of the new technological universities to meet the constant growth in the number of students and society's developing need for academically-trained personnel, especially engineers. One of the main considerations borne in mind when founding new institutions of higher education has been the danger that teaching would become a mass-process in the older universities etc., where it was becoming increasingly difficult to give the individual student the attention he requires.

Thus both inside and outside the universities all manner of forces are at work which seek to change the aspect of higher education in our country. Most of the fundamental problems which have to be tackled in Holland are the same in every country of the West. Anglo-Saxon influences are discernible in the way in which the problems are being solved here. This certainly does not mean that we shall not remain true to ourselves. As Huizinga has said: "Our character and our history have enabled us to incorporate French, American, English and German ideas in equal and harmonious proportions in a manner hardly possible elsewhere". The solutions we endeavour to achieve will be rooted in our traditions and our own national character.

H. J. WOLTJER. *

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CHRONICLE

INTERNATIONAL COURSES

The 1961 NUFFIC Summer Course in Science at Nijenrode

From August 1 to 16, 1961, an international summer course in science – this time devoted to theoretical physics – was held at Nijenrode Castle, once again organized by NUFFIC. A year ago there was a similar course on astronomy.

In recent years there has been an increase in the number of summer courses in theoretical physics held in Europe and elsewhere. This is all the more gratifying because such courses are of inestimable value to the training of young research workers. For a period of two to ten weeks, depending on the course, students who have attained a fairly advanced level in their studies and many of whom have carried out some independent research work themselves, attend lectures on topical subjects and recent research in theoretical physics, mostly given by prominent scientists. Generally speaking, such advanced lectures do not form part of ordinary university training. The student thus has the opportunity of acquainting himself with fields of research that until a few years ago lay completely fallow. In this way, besides gaining knowledge on and insight into the problems, he is provided with a great stimulus to do research work of his own.

A second, equally important aspect of the summer course is that it enables the student to meet older physicists from his own and other countries, and to exchange opinions and discuss personal ideas for further research. Then too, the mutual contact between students of various countries is undeniably significant. In fact, international contacts are indispensable in a branch where the active number of practitioners is comparatively small.

No complicated machinery is required either to practise or teach theoretical physics. A large blackboard and a piece of chalk are the principal requisites. For this reason a summer course on any specific subject of theoretical physics is not in any way bound to a university building, but can be held practically anywhere. Care should be taken, of course, that the most important books and publications are on hand.

It is therefore not surprising that summer schools are to be found in such choice spots as Les Houches at the foot of the Mont Blanc, Varenna on Lake Como, Corsica, etc. Obviously, good use is made during the weekends of the numerous facilities offered by the surroundings, but it would be quite wrong to assume that participation in these summer courses is a form of tourism. I myself have attended numerous summer courses, first as a student and later as a lecturer, and can therefore testify to this. During the week a great deal of work is done by everybody, usually with much enthusiasm.

This past summer one of these courses, dealing with statistical mechanics, was held in our country. It was more or less natural that this subject should have been chosen, since from the beginning of this century, thanks particularly to the efforts of the Ehrenfests, a relatively large amount of attention has been paid to it in the Netherlands. It is a tradition that has been retained throughout the years. Dutch physicists continue to make valuable contributions in this field. Consequently, it proved possible to recruit the majority of the teachers from the Netherlands itself. Of the speakers from other countries, we would mention in the first place Prof. Uhlenbeck, who was a pupil of Ehrenfest at Leyden many years ago, and who, with his profound insight and brilliant lectures, contributed much to the success of the course. Furthermore, it was greatly appreciated that both Prof. Wergeland of Trondheim and Huang of the Massachusetts Institute of Technology, were able to accept the invitation to come and speak.

It soon became apparent that interest in this course was considerable. Of the qualified candidates applying for participation (approximatly 130), more than half had to be refused. As a result of the selection which had to be made, the students who attended were generally of a high level of education. Many had already graduated; others were preparing their thesis and had one or more publications to their name. Of the more than sixty participants, fifteen were Dutch, the remainder coming from fifteen different countries.

While favourable conditions for the success of the summer course were created by the choice of subject, teachers and students, the same thing applied to the choice of location. As is known, Nijenrode is a beautiful castle on the River Vecht near Breukelen. It is the home of the Netherlands College for Representation Abroad, but during the summer months it is available for other purposes. The castle is surrounded by a park and boasts tennis courts and various other sports grounds. The fact that Amsterdam is so near is an additional attraction, particularly for the foreigners. And so, for more than a fortnight, some seventy students and professors occupied the modern Plesman pavilion to concentrate on "Fundamental Problems in Statistical Mechanics." In addition to the ordinary lectures, all of which were given in the mornings, there was a seminary discourse almost every afternoon. The evenings were often devoted to more informal debates and discussions. This programme proved quite, if not too, taxing for the participants, with the result that a certain lassitude became noticeable towards the end of the course. This was partly due to the fact that only two weeks had been set aside for the course, which was really too short. Nevertheless, it seemed to me that the students in most cases followed the lectures with animation and interest and that several of them at least took an active part in the discussions.

Despite the crowded programme there was time for relaxation as well. The sports grounds were in great demand; during the lectures they were generally occupied by the wives and children of the participants. The bar in the cellar beneath the castle was also much frequented. It was not unusual, while having a drink there, to start the most profound deliberations. On one occasion a participant was to be seen on a bar stool, wholly engrossed in a scientific treatise. The programme included the usual excursions and receptions. The party was received by the Burgomaster of Breukelen, there was an excursion to the Rijksmuseum including a tour of the Amsterdam canals, and a trip to the Hoge Veluwe with a visit to the Van Gogh Museum. The course ended with a dinner in the lovely Muiderslot (a castle), where participants heard a concert of chamber music well played by a Delft student quartet.

I am sure that I am not only speaking for myself if I say that at this Netherlands summer course in theoretical physics all reasonable expectations were fulfilled.

N. M. Hugenholtz *

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INTERNATIONAL SCIENTIFIC MEETINGS

First Colloquy of Professors and Lecturers of the Dutch Language and Dutch Culture at Foreign Universities

On September 4 and 5, 1961, the first Colloquy of Professors and Lecturers of the Dutch Language and Dutch Culture at foreign universities took place at The Hague in the building of the Netherlands Universities Foundation for International Co-operation. University teachers of the Dutch language and Dutch culture who occupy an often isolated position in many countries and frequently work under difficult conditions, formerly had relatively little contact with one another. In 1951 and 1955 a group of teachers from Germany visited the Netherlands, but, in general, contact between teachers and their colleagues abroad has been only incidental.

Prof. W. Thys, professor at the State University of Ghent in Belgium and lecturer in the Dutch language, literature and Dutch cultural history at the University of Lille in France, took the trouble to trace the chairs and lectureships in the various countries and to assemble information about them. His article "Dutch Chairs and Lectureships in Other Countries" published in Vol. IV, No. 2, June 1960 of this bulletin, gives a survey of the results of his investigations. The many reactions that were received in connection with this article, led Prof. Thys, in co-operation with NUFFIC, to organize the colloquy, which was the first of its kind.

The two-day meeting was attended by some twenty teachers from Denmark, the United Kingdom, France, Italy, West-Germany, South-Africa and Sweden. Though several more professors and teachers in other countries had given proof of their interest, they were unable to attend the colloquy either because of the distance involved or for other reasons.

A number of speakers at the colloquy reported on the instruction in the Dutch language and Dutch literature at institutions of higher education abroad. They included Dr. J. M. Jalink, former lecturer at Bonn, who spoke about present-day education in the Federal Republic and West Berlin. Mr. P. K. King, M.A., lecturer at Cambridge University discussed the advantages and disadvantages of a written examination system. Prof. Ludwig E. Schmitt, Dr. Phil., of Marburg University discussed some Dutch language and culture problems at German Universities. Drs. J. H. Meter, lecturer at Naples, reported on the Dutch lectureship there. Dr. A. Hübner, lecturer at Hamburg University, gave her views on "Middle Nether-German – Dutch" as a specific Hamburgian combination. Dr. P. W. Tax, scientific assistant at Saarbrücken University, reported on the Dutch language in Saarbrücken, whilst Mr. J. Z. Uys, M.A., former lecturer in Natal, and currently assistant to Prof. van der Merwe Scholtz at the University of Amsterdam, spoke about "Indistinctnesses (and inconsistencies) in Dutch Spelling." A report by Prof. W. Lagerwey of Calvin College, U.S.A. on "Magnitude of Desired Programmes for the Study of Dutch Language and Culture in the U.S.A." as well as a letter from Prof. Th. Weevers of London University, were read out in their absence.

However, the main feature of the conference was the discussion of joint practical problems, divided into four groups:

1) Problems regarding study and reading material, language and literature courses;
2) Problems of the Dutch library abroad; purchase, gifts and the supply by public authorities in the Netherlands and Belgium;
3) The status of the professor and lecturer in Dutch language and culture in other countries; administrative and financial status;
4) The foreign student of Dutch; study travels, scholarships, holiday courses, etc.

Various shared wishes were formulated. The colloquy decided to appoint a working committee charged with:

1) drawing up the definitive resolutions;
2) drawing up a report on the first colloquy;
3) preparing a publication devoted to the teaching of Dutch and the spreading of Dutch culture in other countries;
4) preparing a second colloquy.

The September colloquy attracted the notice of official bodies in the Netherlands. The opening was attended by the Belgian Ambassador, F. X. Baron van der Straten-Waillet, and Dr. J. H. Wesselings, Secretary General of the Ministry of Education, Arts and Sciences. In the afternoon of the first day the party was received at the Ministry by the Secretary General. At a dinner attended by other guests, Mr. J. M. L. Th. Cals, Minister of Education, Arts and Sciences, was among those present. Mr. Cals also attended an evening meeting where an address was given by Prof. W. J. M. A.

Asselbergs, professor of the Dutch Language and Dutch literature at the R.C. University of Nymegen. On the second day of the conference a visit was paid to the Netherlands Literature Museum and Documentation Centre in The Hague.
The first colloquy provided participants with something they had long been looking forward to: closer personal, professional and scientific contact, joint discussions on communal problems and opportunities for joint action.

Jubilee Convention of the Royal Geological and Mining Society of the Netherlands and of the Geological Survey Foundation of the Netherlands

In connection with the 50th anniversary of the Foundation of the Royal Geological and Mining Society of the Netherlands and the 60th anniversary of the foundation of the Geological Survey Foundation of the Netherlands, a jubilee convention is to take place from April 26 to May 3, 1962, at The Hague.
The main theme of discussion will be: Geology and Mining in the Netherlands.
In addition to plenary meetings, meetings will be held on paleozoic, mesozoic and cenozoic subjects.
The programme will include seven excursions and a number of receptions. Furthermore there will be a Ladies Programme, arranged under the auspices of the Hague Ladies Committee "The Hague Receives."
English will be the official language of the convention.
Entrance fees will be Fl. 80— for participants and Fl. 20— for the ladies.

Information:

Secretariat of the Jubilee Convention,
14, Burgemeester de Monchyplein,
The Hague (Tel. No. 070-185281)

Congress of the International College of Surgeons

The International College of Surgeons is to hold a congress in the Royal Tropical Institute at Amsterdam from May 14 to 19, 1962, in the course of which the following subjects will be discussed:

burns; plastic surgery of the palate; construction, ventilation, illumination of operating rooms; surgical infections (especially anaerobe); bone transplantation in orthopedics; methods of treatment of mamma carcinoma; revised opinions in the surgery of the carcinoma; surgery of the nerv. facialis and a large number of subsidiary subjects in three sections.

Furthermore, a medical film programme will be shown and a visit is planned to the caisson of Prof. Dr. W. G. Boerema's department (Gynaecological Section).

Information:

Congress Service of the Amsterdam,
Municipality,
St. Agnietenstraat, Amsterdam-C.

International Conference on Magnetic and Electric Resonance and Relaxation

This conference will take place from July 2 to 7, 1962, in the college halls of the Technological University at Eindhoven, under the auspices of the "Groupement AMPERE" and "The Netherlands Physical Society."
The main theme of the conference will be "Double Resonance Experiments." In addition, an open discussion will be held on "Nuclear Magnetic Resonance", "Electron Spin Resonance", "Dielectric Relaxation", "Quadrupole Resonance" and allied subjects. The discourses will be given and the discussions held either in English or in French.

Information:

Dr. D. J. Kroon,
Philips Research Laboratoria,
Eindhoven.

Sixth General Conference of the International Council of Museums (I.C.O.M. '62)

This conference is to be held in The Hague and other places in the Netherlands from July 4 to 11, 1962, under the auspices of the National Netherlands Committee of the International Council of Museums.
The following subjects will be discussed:

- Observations on the museum professions;
- Preservation of objects of cultural value in tropical and subtropical regions;
- The role of museums in a changing world;
- Measures against theft of works of art.

In addition a discourse will be held entitled: "The Function of Museums: Research Centres or Show Places?" The programme also includes visits to various museums and a number of excursions.
The official languages will be English and French.
Entrance fees will be Fl. 35 for participants and Fl. 25 for the wives of participants.

Information:

Secretariat of the I.C.O.M. '62,
14, Burgemeester de Monchyplein,
The Hague (Tel. No. 070-185281)

Fifth International Congress for Child Psychiatry

The International Association for Child Psychiatry and Allied Professions (I.A.C.P. and A.P.) is to hold its fifth congress at Scheveningen from August 24 to 30, 1962. The main theme of this congress will be: Prevention of Mental Disorders in Children, to be divided into three groups, i.e.:

- somatic aspects;
- psycho-social aspects;
- practical applications (prevention by influence of the community, in a narrower sense, the family).

The preparations for the congress have been placed in the hands of a national committee, the executive of which comprises:

Dr. A. Arn van Krevelen,
Prof. Dr. Th. Hart de Ruyter,
Dr. P. van den Broek,
Drs. C. Steketee.

In principle participation in the congress is open to anybody who is interested. However, only members of the I.A.C.P. and A.P. and a few special guests will be able to take part in the discussion groups to be held during the afternoon sessions.

Information:

Secretariat of the Fifth International Congress for Child Psychiatry,
c/o Holland Organizing Centre,
16, Lange Voorhout, The Hague.

Sixth International Audiological Congress

The International Society of Audiology is organizing its Sixth International Audiological Congress to be held at Noordwijk from September 5 to 9, 1962. The following three main subjects will be dealt with in Round Table discussions:

- Frequency analysis of the normal and pathological ear (in this case Prof. Dr. G. von Békésy will act as moderator);
- Central deafness in children (moderator: Prof. Dr. J. M. Tato);
- Psychogenic deafness and simulation (moderator: Prof. Dr. H. A. E. van Dishoeck).

Participation is open to anybody possessing some qualifications in the audiological field.

Information:

Secretary of the organizing committee
Drs. A. Spoor,
Ear-Nose-Throat Clinic,
University Hospital,
Leyden.

Soil Zoology Symposium

The International Society of Soil Science is organizing a symposium at Oosterbeek from September 10 to 16, 1962. Its objective is: Synecological approach to microbiological problems, study of function of soil fauna and soil micro-organisms; interrelation soil fauna and soil microflora.
Non-members can take part in this symposium if they wish. They should apply to the Secretary General of the International Society of Soil Science, 63, Mauritskade, Amsterdam.

Information:

Dr. J. van der Drift
c/o I.T.B.O.N.,
11, Kemperbergerweg, Arnhem.

Sixth International Congress for Ultra-Rapid Photography

This congress will take place at The Hague from September 17 to 22, 1962. Further particulars will be announced in the next issue of this bulletin.

Information:

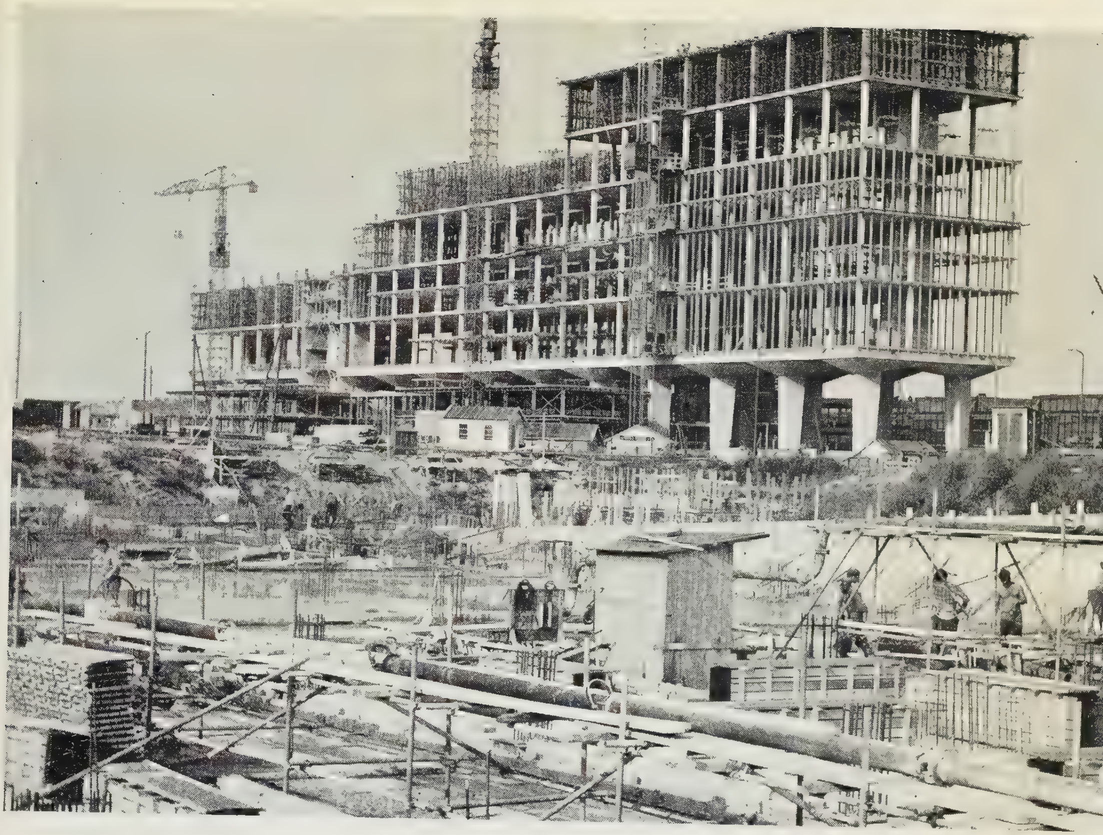
Congress Secretariat,
14, Burgemeester de Monchyplein,
The Hague, (Tel. No. 070-185281).

Conference of the "Fédération Internationale de Documentation (F.I.D.)"

The Secretariat of the Fédération Internationale de Documentation (F.I.D.) in cooperation with the Netherlands Institute for Documentation and Registration (N.I.D.E.R.) will be organizing a conference in 1962 which will probably take place in September at The Hague. Further particulars will follow in the next issue of this bulletin.

Information:

F.I.D. Secretariat
7, Hofweg, The Hague
(Tel. No. 070-180061; Telegrams:
FIDOC – The Hague)



Technological University at Eindhoven (founded in 1957)
In the foreground: The foundations of the overground building of the Department of Chemistry; in the background: the main building in the making

(By courtesy of the Information Office of the University)

"Het Oude Hof" (the former Royal Palace Noordeinde) at The Hague; in the left wing of the building the NUFFIC offices are located.

(Photograph K.L.M. AEROCARTO n.v.)

DISSERTATIONS

Theology

MEUZELAAR, JACOBUS JOHANNES. *Der Leib des Messias. Eine exegetische Studie uber den Gedanken vom Leib Christi in den Paulusbriefen.* Assen, 1961.
University of Amsterdam.

MÜLLER, BETHEL ANTONIE. *Die lewende Woord an die mens van die hede. 'n Bespreking van die vrae rondom die aktuele Woordverkondiging.* (The Living Word to Present-day Man. A discussion of questions centering upon present-day preaching of the Gospel.)
Zaandijk, 1961.
With a summary in English.
Free (Reformed) University of Amsterdam.

Law

HAFEZ, MAHMOUD MOHAMED. *Juridical Nature of International Unlawful Acts.* 1961.
State University at Utrecht.

UYS, JOHAN FREDERIK. *Die genootskapooreenkoms.* (Company Contracts.) Leyden, 1961.
With a summary in English.
State University at Leyden.

Medicine

BRONGERS, EVELINE ELISABETH. *Haptoglobine en verhoogde bloedafbraak.* (Haptoglobin and Increased Haemolysis.) Amsterdam, 1961.
With a summary in English.
University of Amsterdam.

GROOT, WILHELMUS PIETER DE. *Thesaurismosis hereditaria. Ruiter- Pompen-Wyers. Angiokeratoma corporis diffusum Fabry.* Amsterdam, 1961.
With a summary in English.
University of Amsterdam.

VLASSENROOT, GEORGE EDUARD. *Toepassing van de subtractie methode bij de kleinbeeld-angiocardiografie.* (Application of the Subtraction Method in 35 mm. Angiocardiography.) Stuttgart, 1961.
With a summary in English.
University of Amsterdam.

WONG LUN HING, FRANS JOHANNES HUBERTUS. *Prostitutie. Een fenomenologische studie uit een huisartsenpraktijk.* (Prostitution. A Phenomenological Study from a Family Doctor's Practice.) Utrecht, 1961.
With a summary in English.
State University at Leyden.

WAASBERGEN, GERRIT PIETER WOUTER VAN. *Het microscopische aspect der perifere longlymfvaten bij veranderingen in de kleine bloedsomloop.* (The Microscopic Aspect of Peripherial Lymphatic Vessels in the Lung in Connection with Changes in the Lesser Circulation of the Blood.) Leyden, 1961.
With summaries in English, French and German.
State University at Leyden.

Arts

MEER, JOHN HENRY VAN DER. *Johann Josef Fux als Opernkomponist.* (Johann Josef Fux as Opera Composer.) 1961.
State University at Utrecht.

KURIA, GEORGE. *The Indian Family in Transition. A case study of Kerala Syrian Christians.* The Hague, 1961.
State University at Utrecht.

Sciences

DRIEL, WILLEM VAN. *Studies on the Conversions of Animo Acids in Soil.* Amsterdam, 1961.
With a summary in Dutch.
University of Amsterdam.

PALM, JAN HENDRIK. *Habit Modification in the System Rocksalt – Urea – Water. A crystallographic investigation of nacl. urea. H_2O and nabr. urea H_2O.* Groningen, 1961.
With a summary in Dutch.
University of Amsterdam.

BOER, PIETER JOHANNES DEN. *The Ecological Significance of Activity Patterns in the Woodlouse Porcellio Scaber Latr.* (*Isopoda*). Groningen, 1961.
State University at Leyden.

BOUMA, ARNOLD HEIKO. *Sedimentology of Some Flysch Deposits.* A graphic approach to facies interpretation. Utrecht, 1961
With summaries in English and Dutch.
State University at Utrecht.

DEEN, RUDOLF. *Optical Rotatory Dispersion of Some Organic Molecules.* Leyden, 1961.
With a summary in Dutch.
State University at Leyden.

SCHARLOO, WILLEM. *The Influence of Selection and Temperature on a Mutant Character (${}_{ci}D$) in Drosophila Melanogaster.* Groningen, 1961.
State University at Leyden.

SCHILT, RUDOLF. *Pectinen en Pectinesplitsende enzymen. Een overzicht alsmede een bijdrage tot het onderzoek en de identificatie van pectinen, enige andere gelerende stoffen en verdikkingsmiddelen en pectinesplitsende enzymen.* (Pectic Substances and Pectolytic Enzymes. A survey as well as a contribution to the examination and the identification of pectic substances, some other gelforming and thickening substances and pectolytic enzymes.) Utrecht, 1961.
With a summary in English.
State University at Utrecht.

ZADOKS, JAN CAREL. *Yellow Rust on Wheat. Studies in epidemiology and physiologic specalization.* Wageningen, 1961.
With a summary in Dutch.
University of Amsterdam.

Social Sciences

HESKES, JOHANNES. *Onderzoek naar de waardering voor de grootindustrie getoetst aan de waardering voor „Philips" en andere werkgevers.* (Inquiry into the Public Appreciation of Big Industry as Demonstrated by the Appreciation of „Philips" and other Employers.) Nymegen, 1961.
With a summary in English.
University of Amsterdam.

Economics

DONNER, WALTHER ROËL WILLIAM. *The Financial Mechanism of the Netherlands Antilles.* Amsterdam, 1961.
University of Amsterdam.

LAND, BENJAMIN VAN DER. *Het financieringsbedrag der gemeenten.* (Municipal Finance.) Alphen aan den Rijn, 1961.
Netherlands School of Economics at Rotterdam.

VENTER, WILLEM JOHANNES. *The Incidence of Taxation on the Brewing Industry. A theoretical and empirical study of taxation impact on South African breweries in comparison with those of particular European countries.* Zaandijk, 1961.
Free (Reformed) University of Amsterdam.

Technical Science

ARATEN, DAVID. *Potassium Bicarbonate from Potassium Chloride and Sodium Bicarbonate from Sodium Chloride. By ion-exchange and water -transfer with alcohols.* Haifa 1961.
With summaries in Dutch and Hebrew.
Technological University at Delft.

Veterinary Science

NIE, CORNELIS JAN VAN. *Congenitale hartsmisvormingen bij het varken.* (Congenital Heartmalformations of the Pig.) Meppel, 1961.
With summaries in English, French and German.
State University at Utrecht.

SCHOLARSHIPS AND FELLOWSHIPS FOR FOREIGN STUDENTS, TENABLE IN THE NETHERLANDS[1]

Netherlands Universities Foundation for International Co-operation

a–d. Scholarships for study at the Institute of Social Studies;
e. A limited number of other scholarships and fellowships.

1. *a.* Social Sciences,
   b. Public Administration,
   c. Economic Planning and Statistics,
   d. Social Welfare Policy or Child and Youth Welfare Policy,
   e. Study of subjects directly relevant to the aims of NUFFIC and study of subjects for which the Netherlands are the most appropriate country.
2. *a–d.* Institute of Social Studies, The Hague,
   e. The Netherlands.
3. Available to nationals of *all countries; a.* Holders of a M. A. degree in one of the social sciences; *b.* Persons with broad experience in the public service or as a staff member in institutes of public administration; *c.* Economists and statisticians (preferably from low-income countries) with broad practical experience; *d.* Sociologists or social workers (preferably from low-income countries) with broad practical experience; *e.* Persons with an advanced graduate status.
4. *a.* Fl. 5,470 maximum,
   b. Fl. 1,650 maximum,
   c. Fl. 1,650 maximum,
   d. Fl. 1,975 maximum,
   e. Unspecified.
5. *a.* 16 months; *b.* 6 months; *c.* 6 months; *d.* 7 months; *e.* unspecified.
6. Unspecified.
7. *a–d.* The Rector, Institute of Social Studies, 27 Molenstraat, The Hague: *a.* by June 1[2]; *b.* by October 1[2]; *c.* by October 1[2]; *d.* by June 1[2]; *e.* Netherlands Universities Foundation for International Co-operation, 27 Molenstraat, The Hague; by October 1.

Institute of Social Studies

27, Molenstraat ,The Hague, tel. 070–630550.
Scholarships (Ford Foundation Grant).

a. 1. Social Welfare Policy or Child and Youth Welfare Policy.
2. Institute of Social Studies, The Hague.
3. Sociologists or social workers (preferably from low-income countries) with broad practical experience.
4. Fl. 1,975.
5. 7 months (starting in September).
6. 8.
7. The Rector, Institute of Social Studies, 27, Molenstraat, The Hague, by June 1.

b. 1. Economic Planning and Statistics.
2. Institute of Social Studies, The Hague.
3. Economists and statisticians (preferably from low-income countries) with broad practical experience.
4. Fl. 1,650.
5. 6 months (starting in January).
6. 5.
7. The Rector, Institute of Social Studies, 27, Molenstraat, The Hague, by October 1.

c. 1. Comprehensive Planning.
2. Institute of Social Studies, The Hague.
3. Engineers, architects, economists, sociologists and public administrators with broad experience in planning.
4. Fl. 1,200.
5. 4 months (starting in September)
6. 8.
7. The Rector, Institute of Social Studies, 27, Molenstraat, The Hague, by June 1.

d. 1. Public Administration.
2. Institute of Social Studies, The Hague.
3. University graduates of high qualification, with a number of years' experience in administration.
4. Fl. 4,650.
5. 16 months (starting in January).
6. 3.
7. The Rector, Institute of Social Studies, 27, Molenstraat, The Hague, by October 1.

e. 1. English language (orientation course).
2. Institute of Social Studies, The Hague.
3. Participants of other courses of the Institute, whose knowledge of the English language needs improvement.
4. 4 months (before the commencement of the main course).
5. Fl. 1,500.
6. 7.

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[1] The figures in the margin refer to: 1: field of study; 2: where tenable; 3: conditions; 4: value; 5: duration; 6: number available; 7: address for applications.
A "1" added after the duration of the scholarship indicates that it is renewable or extendible.

[2] For Indian citizens one month earlier.

7. The Rector, Institute of Social Studies, 27, Molenstraat, The Hague, by June 1 or October 1.

The courses referred to above *a*, *b* and *c* lead to a Diploma of the Institute; Course *d* leads to the Degree of Master of Public Administration.

Government of the Netherlands

Ministry of Education, Arts and Sciences, The Hague, tel. 070-639927.
Exchange Scholarships of the Netherlands. Netherlands-Belgian Cultural Convention.
1. Unrestricted.
2. The Netherlands.
3. Available to *Belgian* nationals; must have university degree or have completed several years' higher study.
4. Fl. 300 per month plus tuition.
5. 1 to 6 months[1].
6. The Convention provides for exchanges of approx. 90 months; number awarded depends on the duration of each scholarship.
7. Ministère de l'Instruction Publique, Bruxelles, in May.

Government of the Netherlands

Ministry of Education, Arts and Sciences, The Hague, tel. 070-639927.
Exchange Scholarships of the Netherlands.
a. Anglo-Dutch Cultural Convention.
b. Netherlands-French Cultural Convention.
1. Unrestricted.
2. The Netherlands.
3. Available to *a. British* nationals; must have a university degree or have completed several years' higher study; *b.* nationals of *France* who have completed several years' higher study.
4. Fl. 300 per month plus tuition.
5. *a.* 1 academic year *b.* 1 to 6 months.
6. *a.* 5; *b.* the Convention provides for exchanges of approx. 80 months; number awarded depends on the duration of each scholarship.
7. *a.* The Director, Universities Department, The British Council, 65, Davies Street, London, W. 1, by March 12;
   b. Office National des Universités et Ecoles Françaises, 96, Boulevard Raspail, Paris-6e, in May.

Government of the Netherlands

Ministry of Education, Arts and Sciences, The Hague, tel. 070-639927.
Netherlands Government Scholarships.
1. Unrestricted.
2. The Netherlands.
3. Available to nationals of *a. Australia; b. Austria; c. Canada; d. Denmark; e. Germany; f. India; g. Norway; h. Spain; i. Sweden; j. Yugoslavia;* must have university degree or have completed several years' higher study.
4. ± Fl. 2,700 plus tuition.
5. 1 academic year.
6. *a.* 3; *b.* 2; *c.* 2; *d.* 1; *e.* 5; *f.* 1; *g.* 2; *h.* 1; *i.* 2; *j.* 2.
7. *Australia:* Office of Education of the Commonwealth of Australia, Canberra; *Austria:* Bundesministerium für Unterricht, Minoritenplatz 5, Wien; *Canada:* Department of External Affairs, Ottawa; *Denmark:* Undervisnings-Ministeriet, København; *Germany:* Deutscher Akademischer Austauschdienst, Nassestrasse 11, Bonn; *India:* Ministry of Foreign Affairs, New Delhi; *Norway:* Kontoret for kulturelt samkven med utlandet, Oslo; *Spain:* Dirección General de Relaciones Culturales, Madrid; *Sweden:* Svenska Institutet, Kungsgatan 42, Stockholm; *Yugoslavia:* Commission for Foreign Cultural Relations, Bircaninova 6, Beograd.

Government of the Netherlands

Ministry of Education, Arts and Sciences, The Hague, tel. 070-639927.
Exchange Scholarships of the Netherlands. Cultural Convention with Luxembourg.
1. Unrestricted.
2. The Netherlands.
3. Available to nationals of *Luxembourg;* must have completed several years' higher study.
4. Fl. 300 per month plus tuition.
5. 1 to 3 months[1].
6. The Convention provides for exchanges of approx. 12 months; number awarded depends on the duration of each scholarship.
7. Ministère de l'Education Nationale, Luxembourg.

Government of the Netherlands

Ministry of Education, Arts and Sciences, The Hague, tel. 070-639927.
Exchange Scholarship of the Netherlands. Cultural Convention with Italy.
1. Unrestricted.
2. The Netherlands.
3. Available to nationals of *Italy;* must have university degree or have completed several years' higher study.
4. Fl. 300 per month plus tuition.
5. 8 months.
6. 6.
7. Direzione Generale delle Relazioni Culturali, Ministero degli Affari Esteri, Piazza Firenze 27, Roma.

Government of the Netherlands

Ministry of Education, Arts and Sciences, The Hague, tel. 070-639927.
Netherlands Government Scholarships.

1. Unrestricted.
2. The Netherlands.
3. Available to *South African* graduates and undergraduates.
4. Fl. 3,600 plus tuition.
5. 12 months.
6. 10.
7. Genootschap Nederland—Suid-Afrika, p/a Dr. F. J. du Toit Spies, Dougallstraat 191. Muckleneuk 191, Pretoria.

Government of the Netherlands

Ministry of Education, Arts and Sciences, The Hague, tel. 070-639927.
a. Hendrik A. van Coenen Torchiana Scholarship. *b.* Edward W. Bok Scholarship. *c.* Hendrik Willem van Loon Scholarship.

1. Unrestricted.
2. The Netherlands.
3. Available to nationals of *U.S.A.*; age preferably under 28; must have bachelor's degree; applicants in the field of medicine must have M.D. degree; some knowledge of Dutch language desirable.
4. Fl. 2,700 plus tuition.
5. 1 academic year.
6. *a.* 1; *b.* 1; *c.* 1.
7. Institute of International Education, 800 2nd Avenue at 42nd Str., New York 17, N.Y., by November 1.

Government of the Netherlands

Ministry of Education, Arts and Sciences, The Hague, tel. 070-639927.
Scholarships for Netherlands Summer Courses.

1. Subjects included in Dutch university summer courses.
2. The Netherlands.
3. Available to nationals of *Belgium*, *France*, *Italy*, *Luxembourg* and *Spain*.
4. Fl. 350–Fl. 400.
5. 1 month.
6. 5 to Belgium; 6 to France; 4 to Italy; 2 to Luxembourg; 4 to Spain.
7. *Belgium:* Ministère de l'Instruction Publique, Bruxelles; *France:* Office National des Universités et Ecoles Françaises, 96, Boulevard Raspail, Paris-6e; *Luxembourg:* Ministère de l'Education Nationale, Luxembourg; *Italy:* Direzione Generale delle Relazioni Culturali, Ministero degli Affari Esteri, Piazza Firenze 27, Roma; *Spain:* Dirección General de Relaciones Culturales. Madrid.

Government of the Netherlands

Netherlands Office for International Technical Assistance, Ministry of Foreign Affairs, 500, Van Alkemadelaan, The Hague, tel. 070-184000.
Netherlands Fellowship Programme for Technical Co-operation.

1. Unrestricted.
2. The Netherlands.
3. Available to nationals of *underdeveloped countries;* candidates must possess good personal qualities, training and experience, which will enable them to benefit from advanced study and observation in the Netherlands; working knowledge of Dutch not necessary, but candidates should speak English, French or German. On completion of studies recipients must return to their home country and work in their profession.
4. Fl. 400 per month, plus travel-costs relating to studies within the Netherlands up to a maximum of Fl. 75 per month, tuition, book allowance in the amount of Fl. 100 or Fl. 175. For short study-visits special financial arrangements are made. In certain cases the Netherlands Government may pay for outward and/or homeward journey from or to candidate's country.
5. Duration varies according to programme of study.
6. Approx. 100.
7. Office of the Netherlands diplomatic representative in candidate's own country.

Free (Reformed) University of Amsterdam

162—166, Keizersgracht, Amsterdam, tel. 020-62971.
Scholarships.

1. Theology, philosophy, arts, medicine, law, natural sciences (chemistry, physics, mathematics, biology), social and economic sciences, psychology, pedagogy, cultural anthropology, geography.
2. The Netherlands: Free (Reformed) University of Amsterdam.
3. Available to nationals of *all countries;* must be educated to university entrance standard. Awards are to enable recipients to acquire academic knowledge based on Christian principles.
4. Fl. 1,250 plus tuition.
5. 1 academic year (October-July).
6. 4.
7. Secretary of the International Relations Committee, Free University, 162—166, Keizersgracht, Amsterdam. (By January 15).

University Asylum Fund

16, F. C. Dondersstraat, Utrecht, tel. 030-16245. Donors: Dutch University students, professors and private persons. Scholarships.

1. Unrestricted.
2. The Netherlands.
3. Available to *refugee* students, to enable them to finish their studies in the Netherlands; must be qualified to undertake academic studies.
4. Fl. 175 per month, plus Fl. 60 every 3 months, tuition, books etc.
5. Unspecified (until completion of studies).
6. Unspecified.
7. Foundation University Asylum Fund, 16, F. C. Dondersstraat, Utrecht, and to the offices of international refugee relief organizations.

Netherlands Organization for the Advancement of Pure Research (Z.W.O.)

60, Lange Voorhout, The Hague, tel. 070-602907.

Exchange Fellowships for Scientific Research.

1. Scientific research in any science.
2. The Netherlands.
3. Available to *French* nationals who are scientific research workers of proven ability, in exchange for similar facilities for Netherlands research workers offered by the National Council for Scientific Research in Paris.
4. Covers transportation, maintenance and research facilities.
5. Varies in individual cases.
6. Unspecified; as the convention between the Netherlands and the C.N.R.S. provides for exchanges of 30 months of fellowships in an academic year, number of fellowships depends on the duration of each award.
7. Centre National de la Recherche Scientifique, 15, Quai Anatole-France, Paris-7e.

Netherlands Organization for the Advancement of Pure Research (Z.W.O.)

60, Lange Voorhout, The Hague, tel. 070-602907.

Exchange Research Fellowships.

1. Research in any science.
2. The Netherlands.
3. Available to *Italian* nationals who are research workers of proven ability, in exchange for similar facilities for Netherlands research workers offered by the Consiglio Nazionale delle Ricerche in Rome.
4. Covers transportation, maintenance and research facilities.
5. Varies in individual cases (preferably not longer than 4 months).
6. Unspecified (number of fellowships depends on the duration of each award and the funds available).
7. Consiglio Nazionale delle Ricerche, Piazzale delle Scienze 7, Roma.

Utrecht Observatory

2, Zonnenburg, Utrecht, tel. 030-13444.

Exchange Assistantship.

1. Astronomy.
2. The Netherlands: Utrecht Observatory.
3. Available, on an exchange basis, to students of theoretical or observational astrophysics in *any country*.
4. Exchange of salary.
5. Approx. 3 months.
6. 1.
7. Utrecht Observatory, State University of Utrecht, 2, Zonnenburg, Utrecht.

Hague Academy of International Law

Peace Palace, The Hague, tel. 070-392344. Scholarships for the Academy's summer sessions, offered and awarded by the Academy. Scholarships to the Academy are also offered by various governments and public and private institutions to whom direct application should be made. They are not covered by the present notice.

1. International law.
2. The Hague Academy of International Law.
3. Applicants' antecedents should qualify them to benefit from the tuition.
4. In 1962: Fl. 300, covering approximate expenses during the three-week session.
   Travelling expenses will not be refunded.
5. July – August, 1962.
6. The number of scholarships is restricted. In no case more than two will be awarded in one year to persons coming from the same country. This rule does not apply to scholarships instituted in a country for the benefit of its nationals the award of which has been entrusted to the Curatorium of the Academy.
7. Secretariat of the Hague Academy of International Law, The Peace Palace, The Hague, before March 1.

International Agricultural Centre

1, Generaal Foulkesweg, Wageningen, tel. 08370-3173.

Fellowships.

1. Agriculture, including horticulture and forestry.
2. The Netherlands.

3. Available to nationals of *all* countries; age 25 or over; candidates should have M. Sc., or B.Sc. with experience in particular field of study.
4. Maximum Fl. 4,800 p.a., for specialists, plus tuition and insurance; an allowance for study tours in the Netherlands may also be paid.
5. Maximum 12 months.
6. Approx. 10.
7. The Director, International Agricultural Centre, 1, Generaal Foulkesweg, Wageningen.

International Institute for Land Reclamation and Improvement

15, Prinses Marykeweg, Wageningen, tel. 08370-3441.
Fellowships.

1. Land reclamation.
2. The Netherlands.
3. Available to nationals of *all countries;* candidates must be graduates having had a few years' experience in an official position related to the field of land reclamation and improvement, and be able to stimulate research work; must speak English, French or German.
4. Fl. 400 per month, plus transportation in the Netherlands.
5. Usually approx. 2 months.
6. 2.
7. International Institute for Land Reclamation and Improvement, P.O. Box 45, Wageningen (by November).

Philips International Institute of Technological Studies

Study term.

1. Electronics and other subjects in the field of Philips techniques.
2. The Netherlands: Eindhoven, Philips International Institute.
3. Available to nationals of *all countries* who are graduate students with degree in science or engineering; age limit 35. Candidates must have good knowledge of English.
4. Fl. 325 per month, plus free tuition.
5. Maximum 1 year.
6. 25.
7. Director of Studies, Philips International Institute (at least 3 months prior to beginning of studies), tel. 04900-60000.

Netherlands College for Representation Abroad

Nyenrode, Breukelen, tel. 03462-341.
Exchange Scholarships.

1. Commercial and economic studies with special reference to international trade.
2. The Netherlands: Netherlands College for Representation Abroad.
3. Available to male nationals of *U.S.A.* in exchange for similar facilities offered by colleges and universities in U.S.A.; age 18 to 23; preference given to candidates of proven scholatic and leadership ability.
4. Maintenance and tuition.
5. 1 academic year.
6. 5.
7. Netherlands College for Representation Abroad, Nyenrode, Breukelen.

Centre for the European Work of the Dutch Folk High School

Huize Kranenburgh, 22, Hoflaan, Bergen, (N.H.) tel. 02208-2840.

1. Folk high schools.
2. The Netherlands.
3. Available to nationals of *all countries;* age 20 to 30; must be or studying to become adult educators; preferably university education; knowledge of Dutch, English, French or German. Award is to enable recipients to gain practical experience in folk high school work in the Netherlands, as part of the Dutch education system.
4. Maintenance and tuition.
5. 1 month[1].
6. 2.
7. Foundation for the European Work of the Dutch High School, 22, Hoflaan, Bergen, (N.H.), by January 1.

Foundation Study Commission Netherlands Antilles

Scholarships.

1. Unrestricted.
2. The Netherlands.
3. Available to nationals of *the Netherlands Antilles*. Candidates should have completed secondary school education; age 16 to 25. On completion of studies, recipients must serve the Netherlands Antilles Government for a period of 5 years.
4. Fl. 2,500 to Fl. 3,500 plus transportation.
5. 3 to 7 years (duration of study).
6. Unspecified.
7. Minister van Onderwijs en Volksontwikkeling, Willemstad, Curaçao or Bestuurscollege Eilandgebied Aruba at Aruba.

Fulbright Program

Scholarships in the Netherlands, Fulbright Agreement, U.S.A.–Netherlands.

1. Unrestricted.
2. The Netherlands.
3. Available for *U.S.* citizens – students must have at least college-education; teachers M.A.; lecturers Ph. D. degree.
4. Fl. 536 per month + tuition (students),
   Fl. 1,284 „ „ (teachers),
   Fl. 1,350—Fl. 1,680 per month (lecturers).
   Married lecturers and teachers receive additional allowances according to the size of their family. Travel costs paid to and from the Netherlands. Available 3 travel grants, only for researchers who have made their own arrangements for maintenance.
5. Approximate figures: 10 lecturers, 20 students, 8 teachers.
6. Duration: 9 months (students, lecturers), 10 months (teachers).
7. For students:
   Institute of International Education,
   800, 2nd Avenue at 42nd street, New York 17, N.Y.
   For teachers:
   Office of Education,
   Department of Health, Education and Welfare, Independence Avenue, Washington 25, D.C.
   For lecturers:
   Conference Board of Associated Research Council, 2101, Constitution Avenue, Washington 25, D.C.

Canada Council

a. Post-Doctoral Fellowships ("Senior Research Fellowships");

b. Pre-Doctor's Degree Fellowships.

1. Arts, humanities and social sciences.
2. The Netherlands.
3. Available to residents in *Canada* or Canadians living abroad; *a.* open to scholars, artists, musicians, writers and other workers in, and teachers of, the arts having a well established record in the arts, humanities or social sciences; *b.* candidates are required to hold a Master's degree or have equivalent training; the proposed study must lead to a Doctor's degree.
4. *a.* average value of $ 4,500 (plus travel allowance, plus two-third of travel allowance for wife) – subject in the case of members of university faculties and of Government Departments and agencies to the provision by the employer of an appropriate salary allowance; *b.* average value of $ 2,000 plus travel allowance.
5. *a.* 1 year; b. 1 year[1].
6. The number of awards depends on the number of qualified candidates.
7. The Secretary, The Canada Council, 140. Wellington Street, Ottawa, Canada.
   a. by November 15; *b.* by January 10.

BASIC DATA ON INTERNATIONAL COURSES OFFERED IN THE NETHERLANDS¹)

Institute of Social Studies

Information: The Rector of the Institute of Social Studies, 27, Molenstraat, The Hague, tel. 070-630550.

COURSES OFFERED:

a. Two-year Course in the Social Sciences, leading to the degree of Master of Social Sciences.

REQUIREMENTS FOR ADMISSION: Advanced academic standing in one of the social sciences.

NEXT COURSE STARTING: September 1962.
Closing date for applications: June 1, 1962².

b. Seven-month Course in Social Welfare Policy, leading to the diploma in Social Welfare Policy.

REQUIREMENTS FOR ADMISSION: Practical experience in social work, preferably at the teaching and public service level.

NEXT COURSE STARTING: September 1962.
Closing date for applications: June 1, 1962².

b. special. Specialization in Child and Youth Welfare Policy, within the framework of the Social Welfare Policy Course. Dates and conditions: see *b.*

c. Four-month Course in Comprehensive Planning.

REQUIREMENTS FOR ADMISSION: Graduate standing in social sciences, engineering, architecture or agriculture and broad experience in one of the various fields of planning.

NEXT COURSE STARTING: September 1962.
Closing date for applications: June 1, 1962².

d. Six-month Course in Economic Planning, leading to the diploma in Economic Planning.

REQUIREMENTS FOR ADMISSION: Academic standing at graduate level in economics and/or broad experience in planning, national accounting and statistics.

NEXT COURSE STARTING: January 1963.
Closing date for applications: October 1, 1962².

e. Six-month Course in Statistics, leading to the diploma in Statistics.

REQUIREMENTS FOR ADMISSION: Broad experience in statistics and/or graduate level.

NEXT COURSE STARTING: January 1963.
Closing date for applications: October 1, 1962².

f. Six-month Course in Public Administration. leading to the diploma in Public Administration.

REQUIREMENTS FOR ADMISSION: Advanced academic status and broad experience in the public service or as a staff member in institutes of public administration.

NEXT COURSE STARTING: January 1963.
Closing date for applications: October 1962².

g. One-year study programme leading to the degree of Master of Public Administration.

REQUIREMENTS FOR ADMISSION: Candidates for this programme must either have attended the Course mentioned under *f* or another Course in Public Administration, approved by the Institute, with study results rated above average.

NEXT PROGRAMME STARTING: September 1962.
Closing date for applications: for graduates of the Institute of Social Studies, July 1, 1962, for other applicants April 1, 1962.

a-f. previous. Four-month Orientation Course for non-English speaking students. In this course non-English speaking students are trained to acquire a working knowledge of the English language, in order to be able to attend one of the courses mentioned above under *a* to *f.* Each course starts four month earlier than the main course.

Technological University at Delft - Netherlands Universities Foundation for International Co-operation

Information: NUFFIC, 27, Molenstraat, The Hague.

COURSE OFFERED:

International Course in Hydraulic Engineering. Three branches of study:

1. Tidal and coastal engineering;
2. Reclamation;
3. Rivers and navigation works.

The course lasts eleven months and leads to a diploma.

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¹) Courses are given in English only, unless otherwise mentioned.
²) For Indian citizens application will close one month earlier.

REQUIREMENTS FOR ADMISSION: a degree in engineering of a recognized institution of higher learning.

NEXT COURSE STARTING: October 1962.

Technological University at Delft - Netherlands Universities Foundation for International Co-operation

with the assistance of the World Health Organization.

Information: NUFFIC, 27, Molenstraat, The Hague.

COURSE OFFERED: European Course in Sanitary Engineering, dealing with the struggle with water pollution in densely populated regions.

REQUIREMENTS FOR ADMISSION: A university degree in civil engineering or a related branch of study, and some practical experience in civil engineering.
The numeral clausus for admission has been fixed at 20 participants.

NEXT COURSE STARTING: October 1962.

State-University at Utrecht - Netherlands Universities Foundation for International Co-operation

Information: NUFFIC, 27, Molenstraat, The Hague.

COURSE OFFERED: Summer Course of the Combined Netherlands Universities.
Subject: Europe and the Netherlands.

REQUIREMENTS FOR ADMISSION: Students or graduates of an institute of higher education.

NEXT COURSE: July, 1962.

Netherlands Universities Foundation for International Co-operation

Information: NUFFIC, 27, Molenstraat, The Hague.

COURSE OFFERED: 1962 NUFFIC International Summer Course in Science.
Subject: Asymptotic Distribution, Modulo 1.

REQUIREMENTS FOR ADMISSION: Graduate status in mathematics.

NEXT COURSE STARTING: exact date to be announced in the next issue of this bulletin.

International Training Centre for Aerial Survey

Information: The Dean, International Training Centre for Aerial Survey, 3, Kanaalweg, Delft, tel. 01730-21980.

COURSES OFFERED:

a. Photogrammetry, including cartography, topography and theory of errors. After certain conditions have been fulfilled it is possible to obtain the I.T.C. degrees of Bachelor or Master of Science in Photogrammetric Engineering;

b. Air photography and survey navigation;

c. Photogeology;

d. Soil surveys, using aerial photographs; the use of aerial photographs for soil surveys, soil conservation and land classification; beginners courses and advanced courses.

e. The use of aerial photographs for forestry and other sylvicultural purposes;

f. Aerial survey and regional development.

Lectures and instructions are given in English; French classes only if there are more than 3 participants.
Courses are adapted to individual needs and may therefore vary from some months to two years. Regular courses of Department A, Photogrammetry, take between 1 and 2 years; courses in photointerpretation between 6 months and 1 year.

REQUIREMENTS FOR ADMISSION: Dependent upon the individual student's programme of study. For the courses of Department B, Natural Resources Inventory, indicated above as *c*, *d*, *e*, only those applicants can be accepted who have either some university degree in the corresponding subjects or other preliminary education and experience.

COURSES START in January and September of each year except the courses *e* and *f* which start in January only.

Research Institute for Management Science

Information: Research Institute for Management Science, 76, Nieuwe Laan, Delft, tel. 01730-26990.

COURSE OFFERED:

International Course on Small-scale Industries. Theoretical and practical training in investigating and solving the specific management problems of small-scale industries, and in the methodology which can be applied to the establishment and promotion of new industries. Successful attendance of the course leads to a diploma.

REQUIREMENTS FOR ADMISSION: B.Sc. or M.Sc. or equivalent degree of a recognized university.

NEXT COURSES: May 8, 1962 until October 19, 1962; November 7, 1962 until April, 1963.

International Agricultural Centre at Wageningen

Information: Director, International Agricultural Centre, 1, Generaal Foulkesweg, Wageningen, tel. 08370-3173.

COURSES OFFERED:

a. Research and specialization facilities in special branches of agricultural science, after completion of which a certificate is awarded. Training is adapted to individual needs and may vary from 3 to 12 months.

REQUIREMENTS FOR ADMISSION: in general M.Sc. or equivalent degree of recognized universities or colleges.

b. International Training Centre on Methods and Programme Building in Agricultural and Home Economics Extension, July 9–August 5, 1962.
Language: English, French, German.
Fee: approx. Fl. 825. This amount includes: tuition fee, board and lodging at Wageningen and during field trips; transport charges during field trips and local visits; programmes, papers and other publications.
Participation restricted to 100 participants.
Applications before June 1, 1962.

REQUIREMENTS FOR ADMISSION: Advisory officers and educationalists in agriculture and home economics.

c. Course on Land Drainage, September 17-December 15, 1962.
Language: English.
Fee: Fl. 300. This amount includes: tuition, transport charges during field trips, programmes and papers.
Participation restricted to 25 participants.
Applications before: July 1, 1962.

REQUIREMENTS FOR ADMISSION: Candidates should have a university training in agronomy, irrigation or drainage engineering (at least B.Sc.).

Bouwcentrum (Building Centre)

Information: Bouwcentrum, P.O. Box 299, Rotterdam, tel. 010-116181.

COURSE OFFERED:

International Course on Building in co-operation with the Central Organization for Applied Scientific Research in the Netherlands, T.N.O., and the International Federation of Housing and Planning. The course is on the graduate level and lasts six months. Its object is to present a systematic basis for the treatment of the problems encountered in the building industry and to suggest a number of practical methods for tackling these problems. By attending lectures, taking part in discussions and excursions, as well as practical work, the participants gain knowledge and experience. Architects – working as designer or as builder – as well as civil engineers are able to take part in the course as a result of the possibility of specializing during the course.

NEXT COURSE: October 1962.

The Philips International Institute of Technological Studies

Information: Director of Studies, Philips International Institute, Eindhoven, 04900-60000.

COURSES OFFERED:

a. Individual, theoretical and experimental curricula on any subject within the range of Philips' activities; for instance, electronics and applications thereof, x-rays, light and lighting, etc.

b. Three-month course of lectures on basic electronics (October-December).

c. Three-month advanced-level course of lectures. The main subject of this course may differ from year to year and will generally be related to some form of applied electronics.

Teaching language is English. Nominal duration of a completed period of study is one year.

REQUIREMENTS FOR ADMISSION: a graduate science or engineering degree.

NEXT COURSES: In view of the individual character of the study, students may enter upon their course at any date; the courses mentioned will, however, usually start in October and February.

The Hague Academy of International Law

(Founded in 1923 with aid from the Carnegie Endowment).

Information: The Secretariat, The Hague Academy of International Law, Peace Palace, The Hague, tel. 070-392344.

COURSES OFFERED:

a. 33rd Summer Session, 1962 (consisting of two periods). Lectures on International Law in English and French are given in both periods.

REQUIREMENTS FOR ADMISSION: Study and/or practical experience in international law; university professors and students, civil servants, judges, lawyers, diplomatic, consular and international officers.

NEXT COURSE: 1st period: July 9-27, 1962; 2nd period July 30-August 17, 1962.

b. 6th Session of the Centre of Studies and Research in International Law and International Relations, August 21-September 30, 1962. During this session 30 specially selected participants will be dealing with case-studies in international law.
Attendants of the course will be divided into an English-speaking and a French-speaking group, each with its own Director of Studies.

REQUIREMENTS FOR ADMISSION: advanced academic degree, such as the Academy's diploma, or proof of at least three years actual practice in international affairs.

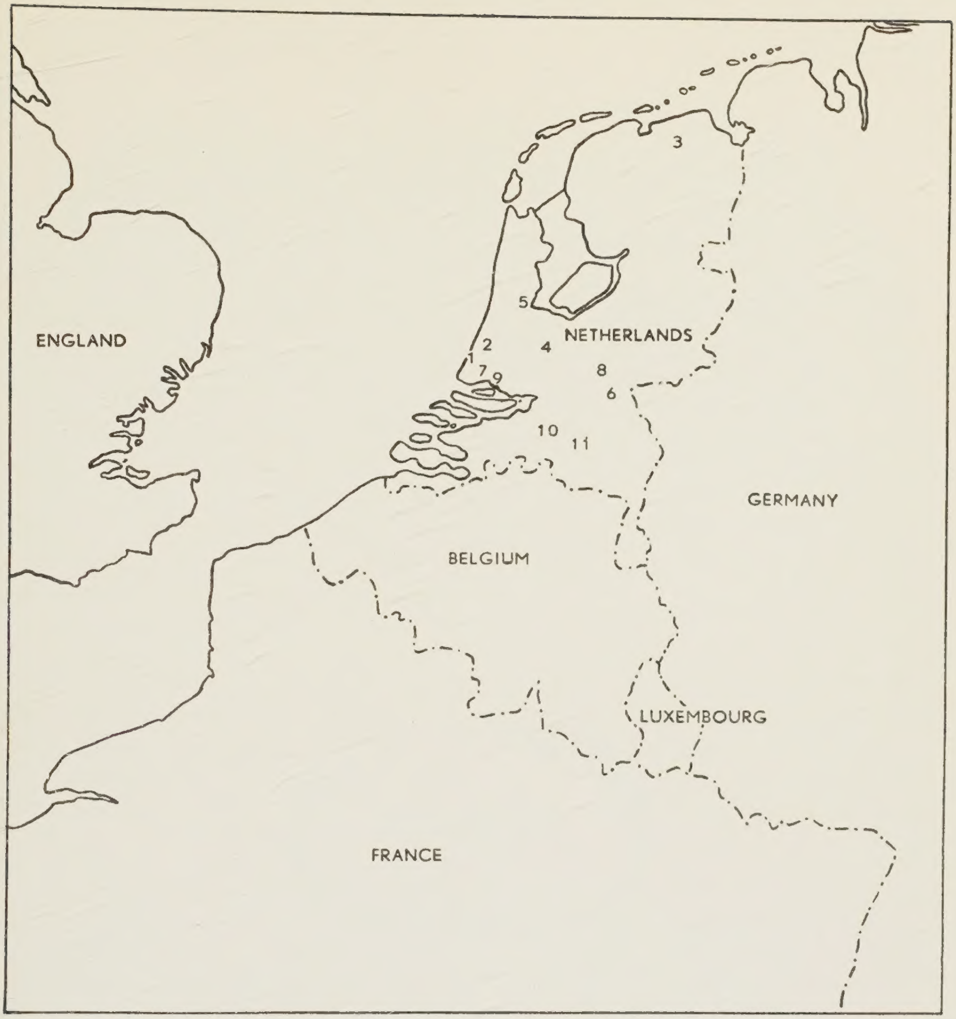
Ministry of Education, Arts and Sciences The Hague - State University at Utrecht

Information: Bureau Organization Congresses of the Ministry of Education, Arts and Sciences, 39, Mauritskade, The Hague, tel. 070-638585.

COURSE OFFERED: Written and oral use of the Dutch language. Lectures on aspects of Dutch civilization.

REQUIREMENTS FOR ADMISSION: Every foreigner may register being at least 18 years old and having a sufficient knowledge of the Dutch language to follow the lectures.

NEXT COURSE: August 9-29, 1962.



1 = The Hague; 2 = Leyden; 3 = Groningen; 4 = Utrecht; 5 = Amsterdam; 6 = Nymegen; 7 = Delft; 8 = Wageningen; 9 = Rotterdam; 10 = Tilburg; 11 = Eindhoven.

The following institutions of higher education participate in the Netherlands Universities Foundation for International Co-operation:

State University at Leyden
State University at Groningen
State University at Utrecht
University of Amsterdam
Free (Reformed) University of Amsterdam
Roman Catholic University at Nymegen
Technologial University at Delft
Netherlands School of Economics at Rotterdam
Agricultural University at Wageningen
Roman Catholic School of Economics at Tilburg
Technological University at Eindhoven

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